

SEQUENCE LISTING

<110> Tang, Y. Tom
 Liu, Chenghua
 Zhou, Ping
 Asundi, Vinod
 Ren, Feiyan
 Zhao, Qing A.
 Zhang, Jie
 Wang, Jian-Rui
 Wehrman, Tom
 Drmanac, Radoje T.

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 Polypeptides

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His Leu Asn Tyr Thr Glu Phe Thr Gln Phe Leu Gln Glu Leu Gln Leu	
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Glu His Ala Arg Gln Ala Phe Ala Leu Lys Asp Lys Ser Lys Ser Gly	
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Met Ile Ser Gly Leu Asp Phe Ser Asp Ile Met Val Thr Ile Arg Ser	
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His Met Leu Thr Pro Phe Val Glu Glu Asn Leu Val Ser Ala Ala Gly	
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Gly Ser Ile Ser His Gln Val Ser Phe Ser Tyr Phe Asn Ala Phe Asn	
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Ser Ala Ile Arg Tyr Gly Gln Val Thr Pro Leu Glu Ile Asp Ile Leu	
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Lys	Phe	Thr	Arg	Arg	Asp	Gly	Ser	Val	Pro	Leu	Pro	Ala	Glu	Val	Leu		
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Pro	Arg	Val	Ser	Ala	Leu	Asn	Val	Leu	Arg	Asp	Leu	Gly	Ile	Phe	Gly		
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Tyr Leu Pro Lys Phe Lys Ser Pro Ser Val Ala Val Val Gln Pro Lys			
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Ala Ala Val Ala Ala Thr Gln *			
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Arg Asn Thr Lys Tyr Leu Asp Leu Lys Asn Ser Gln Glu Met Leu Arg		
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Tyr Lys Glu Val Cys Tyr Tyr Met Leu Phe Ala Leu Ala Ala Tyr Gly		
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Pro Gly Val Thr Ile Glu Glu Asp Asn Cys Cys Gly Cys Asn Ala Ile		
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Val Tyr Thr Ser Cys His Asp Ala Val Tyr Glu Thr Pro Phe Tyr Val		
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Leu Ser Pro Lys Asp Ala Leu Thr Asp Leu Thr Gly Asp Ala Glu Arg		
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Leu Ser Gln Ala Phe Gly Arg Asp Leu Gly Arg Gly Thr Lys His Tyr		
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Ile Gly Leu Ser Gln Leu Glu Gly Phe Arg Arg Gln Leu Leu Asp Val			
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Lys Cys Ile Pro Lys Ser Glu Leu Pro Glu Glu Val Glu Val Thr Thr			
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Pro Thr Tyr Phe Ala Ile Trp Gly Asp Asn Lys Ala Phe Asn Glu Val			
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Ile Ile Ser Pro Ala Met Leu His Glu His Leu Pro Tyr Val Val Met			
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Met Ser Leu Glu Pro Gln Asn Gly Thr Tyr Ala
1 5 10
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Gly Pro Ala Pro Ala Phe Gln Pro Phe Phe Phe Thr Gly Ala Phe Pro
15 20 25
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Phe Asn Met Gln Glu Leu Val Leu Lys Val Arg Ile Gln Asn Pro Ser
30 35 40
ctt cga gaa aat gat ttc att gaa att gaa ctg gac cga cag gag ctc 373
Leu Arg Glu Asn Asp Phe Ile Glu Ile Glu Leu Asp Arg Gln Glu Leu
45 50 55
acc tac caa gag ttg ctc aaa gtg tgt tgc tgt gag ctg ggt gtt aat 421
Thr Tyr Gln Glu Leu Leu Lys Val Cys Cys Cys Glu Leu Gly Val Asn
60 65 70 75
cca gat caa gtg gag aag atc aga aag tta ccc aat act ctg tta agg 469
Pro Asp Gln Val Glu Lys Ile Arg Lys Leu Pro Asn Thr Leu Leu Arg
80 85 90
aag gac aag gat gtt gct cga ctc caa gat ttc cag gag ctg gaa ctg 517
Lys Asp Lys Asp Val Ala Arg Leu Gln Asp Phe Gln Glu Leu Glu Leu
95 100 105
gtt ctg atg ata agt gaa aat aat ttt ctg ttc aga aat gct gca tcc 565

Val Leu Met Ile Ser Glu Asn Asn Phe Leu Phe Arg Asn Ala Ala Ser
 110 115 120

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 Thr Leu Thr Glu Arg Pro Cys Tyr Asn Arg Arg Ala Ser Lys Leu Thr
 125 130 135

tac taa tgcagcaggg acttttatca ctgagtatta tgacagtgtg catcacctct 669
 Tyr *
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ataataataa tgtaggggac ttgatgaagg gaaaggatca gatagattct gaaaagaagt	180
acagaacctg ctaaggccat catacctatt gatcgggaagt cagtccatca gatttgctct	240
ggaccggtgg tactgagtct aatcactgcg tgtaagaaga tagtaggaaa cattctggat	300
gctaggtgcc agtaatatg atctaaagct taaggactat ggaatggatc tcattgaagt	360
ttcaggcaat ggatgtgggg tagaagaaga aaacttcgaa ggcttaatat ctttcagctc	420
tgaacatca cacatctaag attcaagagt ttgccgacct aactcgggtt gaaacttttg	480
gctttcgggg gaaagctctg agctcacttt gtgcactgag tg atg tca cca ttt	534
	Met Ser Pro Phe
	1
cta cct gcc acg tat cgg cga agg ttg gga ctc gac tgg tgt ttg atc	582
Leu Pro Ala Thr Tyr Arg Arg Arg Leu Gly Leu Asp Trp Cys Leu Ile	
5 10 15 20	
acg atg gga aaa tca tcc aga aaa ccc cct acc ccc acc cca gag gga	630
Thr Met Gly Lys Ser Ser Arg Lys Pro Pro Thr Pro Thr Pro Glu Gly	
25 30 35	
ccc aca gtc agc gtg aag cag tta ttt tct acg cta cct gtg cgc cat	678
Pro Thr Val Ser Val Lys Gln Leu Phe Ser Thr Leu Pro Val Arg His	
40 45 50	
aag gaa ttt caa agg aat att aag aag aaa cgt gcc tgc ttc ccc ttc	726
Lys Glu Phe Gln Arg Asn Ile Lys Lys Lys Arg Ala Cys Phe Pro Phe	
55 60 65	
gcc ttc tgc cgt gat tgt cag ttt ctt gag ggc tcc cca gcc atg ctt	774
Ala Phe Cys Arg Asp Cys Gln Phe Leu Glu Gly Ser Pro Ala Met Leu	
70 75 80	
cct gta cag cct gca aaa ctt aca gaa cct gct aag gcc atc aaa cct	822
Pro Val Gln Pro Ala Lys Leu Thr Glu Pro Ala Lys Ala Ile Lys Pro	
85 90 95 100	
att gat cgg aag tca gtc cat cag att tgc tct ggg ccg gtg gta ctg	870
Ile Asp Arg Lys Ser Val His Gln Ile Cys Ser Gly Pro Val Val Leu	
105 110 115	
agt cta agc act gcg gtg aag aag ata gta gga aac agt ctg gat gct	918
Ser Leu Ser Thr Ala Val Lys Lys Ile Val Gly Asn Ser Leu Asp Ala	
120 125 130	
ggg gcc act aat att gat cta aag ctt aag gac tat gga atg gat ctc	966
Gly Ala Thr Asn Ile Asp Leu Lys Leu Lys Asp Tyr Gly Met Asp Leu	

135	140	145	
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Ile Glu Val Ser Gly Asn Gly Cys Gly Val Glu Glu Glu Asn Phe Glu			
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ggc tta tct ctt tca gct ctg aaa cat cac aca tct aag att cga gag			1062
Gly Leu Ser Leu Ser Ala Leu Lys His His Thr Ser Lys Ile Arg Glu			
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ttt gcc gac cta act cgg gtt gaa act ttt ggc ttt cag ggg aaa gct			1110
Phe Ala Asp Leu Thr Arg Val Glu Thr Phe Gly Phe Gln Gly Lys Ala			
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ctg agc tca ctt tgt gca ctg agt gat gtc acc att tct acc tgc cac			1158
Leu Ser Ser Leu Cys Ala Leu Ser Asp Val Thr Ile Ser Thr Cys His			
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gta tcg gcg aag gtt ggg act cga ctg gtg ttt gat cac gat ggg aaa			1206
Val Ser Ala Lys Val Gly Thr Arg Leu Val Phe Asp His Asp Gly Lys			
	215	220	225
atc atc aag aaa acc ccc tac ccc cac ccc aga ggg acc aca gtc agc			1254
Ile Ile Lys Lys Thr Pro Tyr Pro His Pro Arg Gly Thr Thr Val Ser			
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gtg aag cag tta ttt tct acg cta cct gtg cgc cat aag gaa ttt caa			1302
Val Lys Gln Leu Phe Ser Thr Leu Pro Val Arg His Lys Glu Phe Gln			
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Arg Asn Ile Lys Lys Lys Arg Ala Cys Phe Pro Phe Ala Phe Cys Arg			
	265	270	275
gat tgt cag ttt ctt gag ggc tcc cca gcc atg ctt cct gta cag cct			1398
Asp Cys Gln Phe Leu Glu Gly Ser Pro Ala Met Leu Pro Val Gln Pro			
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Ala Lys Leu Thr Val Thr Gly Glu Leu Arg Ala Cys Arg Ser Trp Lys			
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Thr Arg Glu Gly Ile Thr Glu Ala Val Gly *			
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cctcacctct cggcggcggc ggcggcggcg gcggcggcgg cgggcggccg gggagggcggc    300
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gaggaggagg aggctggagt gggcgcgag ggcaccgcc      atg gcg ttc ctc aaa      474
                                           Met Ala Phe Leu Lys
                                           1           5

ctc cgt gac cag cca tca ctg gtg caa gct ata ttt aac gga gat cct      522
Leu Arg Asp Gln Pro Ser Leu Val Gln Ala Ile Phe Asn Gly Asp Pro
                        10                        15                        20

gat gaa gtt cga gca cta ata ttt aag aaa gaa gat gtt aac ttt cag      570
Asp Glu Val Arg Ala Leu Ile Phe Lys Lys Glu Asp Val Asn Phe Gln
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gac aat gaa aag cga acc cca ttg cac gcc gca gct tac ctt gga gat      618
Asp Asn Glu Lys Arg Thr Pro Leu His Ala Ala Ala Tyr Leu Gly Asp
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gca gaa atc att gaa ctt ctt att tta tct gga gct aga gtt aat gcc      666
Ala Glu Ile Ile Glu Leu Leu Ile Leu Ser Gly Ala Arg Val Asn Ala
                        55                        60                        65

aaa gac agc aaa tgg ttg aca cct tta cac aga gca gtt gca tct tgt      714
Lys Asp Ser Lys Trp Leu Thr Pro Leu His Arg Ala Val Ala Ser Cys
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agt gag gaa gca gtt cag gta ctt ttg aag cat tct gca gat gtt aat      762
Ser Glu Glu Ala Val Gln Val Leu Leu Lys His Ser Ala Asp Val Asn
                        90                        95                        100

gct cga gac aaa aat tgg caa acc cct tta cat ata gct gct gct aat      810
Ala Arg Asp Lys Asn Trp Gln Thr Pro Leu His Ile Ala Ala Ala Asn
                        105                        110                        115

aaa gct gta aag tgt gct gaa gct ttg gta cct ctt ctg agt aat gta      858
Lys Ala Val Lys Cys Ala Glu Ala Leu Val Pro Leu Leu Ser Asn Val
                        120                        125                        130

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gaa gtg aca tgc aag gat aaa aag tct tat aca cct ctt cat gca gca Glu Val Thr Cys Lys Asp Lys Lys Ser Tyr Thr Pro Leu His Ala Ala 200 205 210	1098
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atc cag agt gga gct gta atc gac tgt gag gat aag aat gga aat acc Ile Gln Ser Gly Ala Val Ile Asp Cys Glu Asp Lys Asn Gly Asn Thr 330 335 340	1482
cct ttg cac ata gca gca cgg tat ggc cat gag ctg ctg atc aac act Pro Leu His Ile Ala Ala Arg Tyr Gly His Glu Leu Leu Ile Asn Thr 345 350 355	1530

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aag tgc ctg gaa tac tta tta aga aac gat gca aat cca ggg atc cgt Lys Cys Leu Glu Tyr Leu Leu Arg Asn Asp Ala Asn Pro Gly Ile Arg 490 495 500	1962
gat aag caa gga tac aac gca gtt cat tat tca gct gct tat ggt cac Asp Lys Gln Gly Tyr Asn Ala Val His Tyr Ser Ala Ala Tyr Gly His 505 510 515	2010
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Ser Gly Arg Thr Pro Leu Asp Leu Ala Ala Phe Lys Gly His Val Glu
585 590 595

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600 605 610

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615 620 625

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650 655 660

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665 670 675

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680 685 690

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695 700 705

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Ala Lys Cys Leu Leu Arg Asp Ser Arg Gly Arg Thr Pro Ile His Leu
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730 735 740

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Ala Ala Ser Met Asp Ala Asn Pro Ala Thr Ala Asp Asn His Gly Tyr
745 750 755

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Thr Ala Leu His Trp Ala Cys Tyr Asn Gly His Glu Thr Cys Val Glu
760 765 770

ctg ctt tta gaa cag gaa gtt ttc cag aaa acg gaa gga aat gct ttt 2826
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775 780 785

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Ser Pro Leu His Cys Ala Val Ile Asn Asp Asn Glu Gly Ala Ala Glu
790 795 800 805

atg tta att gat aca tta ggt gcc agc att gtg aac gcc aca gat tca 2922
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Lys Gly Arg Thr Pro Leu His Ala Ala Ala Phe Thr Asp His Val Glu			
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Cys Leu Gln Leu Leu Leu Ser His Asn Ala Gln Val Asn Ser Val Asp			
840	845	850	
tct aca ggg aaa aca cct ctt atg atg gct gca gaa aat gga caa aca			3066
Ser Thr Gly Lys Thr Pro Leu Met Met Ala Ala Glu Asn Gly Gln Thr			
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aat aca gtt gag atg ctg gtt agc agt gct agt gca gaa ctg act tta			3114
Asn Thr Val Glu Met Leu Val Ser Ser Ala Ser Ala Glu Leu Thr Leu			
870	875	880	885
caa gat aac agt aaa aat act gcc ctc cat ttg gct tgt agc aag ggt			3162
Gln Asp Asn Ser Lys Asn Thr Ala Leu His Leu Ala Cys Ser Lys Gly			
890	895	900	
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His Glu Thr Ser Ala Leu Leu Ile Leu Glu Lys Ile Thr Asp Arg Asn			
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ctc atc aat gca acc aac gca gcc ttg caa aca cct ctg cat gtt gct			3258
Leu Ile Asn Ala Thr Asn Ala Ala Leu Gln Thr Pro Leu His Val Ala			
920	925	930	
gcc cga aat ggg cta aca atg gtg gtt cag gaa ctt ttg gga aaa gga			3306
Ala Arg Asn Gly Leu Thr Met Val Val Gln Glu Leu Leu Gly Lys Gly			
935	940	945	
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Ala Ser Val Leu Ala Val Asp Glu Asn Gly Tyr Thr Pro Ala Leu Ala			
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Cys Ala Pro Asn Lys Asp Val Ala Asp Cys Leu Ala Leu Ile Leu Ala			
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acc atg atg cct gtc tca tca agt agt cct tta tca tcc tta aca ttc			3450
Thr Met Met Pro Val Ser Ser Ser Ser Pro Leu Ser Ser Leu Thr Phe			
985	990	995	
aat gcc att aac cgt tat acc aac acc tca aaa aca gtc agc ttt gaa			3498
Asn Ala Ile Asn Arg Tyr Thr Asn Thr Ser Lys Thr Val Ser Phe Glu			
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gct ttg ccc atc atg agg aat gaa cct agc tcc tat tgc agt ttc aat			3546
Ala Leu Pro Ile Met Arg Asn Glu Pro Ser Ser Tyr Cys Ser Phe Asn			
1015	1020	1025	
aac att gga ggg gaa cag gag tac tta tac act gac gtg gat gag ctc			3594
Asn Ile Gly Gly Glu Gln Glu Tyr Leu Tyr Thr Asp Val Asp Glu Leu			
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aac gac tcc gat tct gag acc tac tga gaggc tgaggaggag ggagttctca 3646
 Asn Asp Ser Asp Ser Glu Thr Tyr *
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gct aaa act aac gct ggg gca ggg tct ggg gcc aaa ctt cag ggt gat 605
 Ala Lys Thr Asn Ala Gly Ala Gly Ser Gly Ala Lys Leu Gln Gly Asp
 60 65 70

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 Ser Glu Val Lys Pro Glu Val Ser Leu Gly Leu Glu Asp Cys Pro Gly
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Val Lys Glu Lys Ala His Ser Gly Ser His Ser Gly Gly Gly Leu Glu	
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Ala Lys Ala Lys Ala Leu Phe Asn Thr Leu Lys Glu Gln Ala Ser Ala	
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Lys Ala Gly Lys Gly Ala Arg Val Gly Thr Ile Ser Gly Asn Arg Thr	
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ctt gca ccg agt tta ccc tgc cca gga ggc agg ggt gga ggc tgc cac	845
Leu Ala Pro Ser Leu Pro Cys Pro Gly Gly Arg Gly Gly Gly Cys His	
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Pro Thr Arg Ser Gly Ser Arg Ala Gly Gly Arg Ala Ser Gly Lys Ser	
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Lys Gly Lys Ala Arg Ser Lys Ser Thr Arg Ala Pro Ala Thr Thr Trp	
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Pro Val Arg Arg Gly Lys Phe Asn Phe Pro Tyr Lys Ile Asp Asp Ile	
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Leu Ser Ala Pro Asp Leu Gln Lys Val Leu Asn Ile Leu Glu Arg Thr	
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Asn Asp Pro Phe Ile Gln Glu Val Ala Leu Val Thr Leu Gly Asn Asn	
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Pro Ile Ile Ala Lys Leu Ile Lys Thr Lys Asp Pro Ile Ile Arg Glu	
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Lys Thr Tyr Asn Ala Leu Asn Asn Leu Ser Val Asn Ala Glu Asn Gln	
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Gly Lys Ile Lys Thr Tyr Ile Ser Gln Val Cys Asp Asp Thr Met Val	
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Cys Arg Leu Asp Ser Ala Val Gln Met Ala Gly Leu Arg Leu Leu Thr	
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cag att atg aaa cta att ata aac ttt act gaa aat cca gcc atg aca Gln Ile Met Lys Leu Ile Ile Asn Phe Thr Glu Asn Pro Ala Met Thr 350 355 360	1469
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gag aat ata aat gac aac ata aaa aat gaa ggg ctc gca tca tcc agg Glu Asn Ile Asn Asp Asn Ile Lys Asn Glu Gly Leu Ala Ser Ser Arg 395 400 405	1613
aaa gaa ttc agc aga agt tca ctt ttt ttc tta ttc aaa gag tct gga Lys Glu Phe Ser Arg Ser Ser Leu Phe Phe Leu Phe Lys Glu Ser Gly 410 415 420 425	1661
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Met Thr Met Thr Thr Met Pro Glu Ser Leu	
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Asn Ser Pro Val Ser Gly Lys Ala Val Phe Met Glu Phe Gly Pro Pro	
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Asn Gln Gln Met Ser Pro Ser Pro Met Ser His Gly His Tyr Ser Met	
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His Cys Leu His Ser Ala Gly His Ser Gln Pro Asp Gly Ala Tyr Ser	
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Ser Ala Ser Ser Phe Ser Arg Pro Leu Gly Tyr Pro Tyr Val Asn Ser	
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Val Ser Ser His Ala Ser Ser Pro Tyr Ile Ser Ser Val Gln Ser Tyr	
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Pro Gly Ser Ala Ser Leu Ala Gln Ser Arg Leu Glu Asp Pro Gly Ala	
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Arg Ala Leu Ser Ala Gly Ser Pro Pro Val Pro Pro Gly Trp Asn Pro	
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Pro Ser Tyr Thr Ser Trp Tyr Pro Ser Ala His Gln Glu Ala Met Gln	
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Met Arg Ala Ala Arg Ala Leu
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Leu Pro Leu Leu Leu Gln Ala Cys Trp Thr Ala Ala Gln Asp Glu Pro
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Glu Thr Pro Arg Ala Val Ala Phe Gln Asp Cys Pro Val Asp Leu Phe
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Phe Val Leu Asp Thr Ser Glu Ser Val Ala Leu Arg Leu Lys Pro Tyr
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Gly Ala Leu Val Asp Lys Val Lys Ser Phe Thr Lys Arg Phe Ile Asp
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Ala Gly Ala Leu His Tyr Ser Asp Glu Val Glu Ile Ile Gln Gly Leu
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Val Lys Tyr Phe Gly Lys Gly Thr Tyr Thr Asp Cys Ala Ile Lys Lys
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185 190 195

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 890 895 900

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ctg ggc tat gtg acc cgc ttc tac cgc gag gcc tcg tcc ggc gct gcc 2958
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 920 925 930 935

aag aag agg ctg ctg ctc ttc tca gat ggc aac tcg cag ggc gcc acg 3006
 Lys Lys Arg Leu Leu Leu Phe Ser Asp Gly Asn Ser Gln Gly Ala Thr
 940 945 950

ccc gct gcc atc gag aag gcc gtg cag gaa gcc cag cgg gca ggc atc 3054
 Pro Ala Ala Ile Glu Lys Ala Val Gln Glu Ala Gln Arg Ala Gly Ile
 955 960 965

gag atc ttc gtg gtg gtc gtg ggc cgc cag gtg aat gag ccc cac atc 3102
 Glu Ile Phe Val Val Val Val Gly Arg Gln Val Asn Glu Pro His Ile
 970 975 980

cgc gtc ctg gtc acc ggc aag acg gcc gag tac gac gtg gcc tac ggc 3150
 Arg Val Leu Val Thr Gly Lys Thr Ala Glu Tyr Asp Val Ala Tyr Gly
 985 990 995

gag agc cac ctg ttc cgt gtc ccc agc tac cag gcc ctg ctc cgc ggt 3198
 Glu Ser His Leu Phe Arg Val Pro Ser Tyr Gln Ala Leu Leu Arg Gly
 1000 1005 1010 1015

gtc ttc cac cag aca gtc tcc agg aag gtg gcg ctg ggc tag cccaccc 3247
 Val Phe His Gln Thr Val Ser Arg Lys Val Ala Leu Gly *
 1020 1025

tgcacgccgg caccaaacc tgtcctccca cccctcccca ctcatcacta aacagagaaa 3307

agcttggaag gccaggacac aacgctgctg cctgctttgt gcagggtcct ccggggctca 3367

gccctgagtt ggcacacact gcgcagggcc ctctggggct cagccctgag ctagtgtcac 3427

ctgcacaggg cccctctgggg ctcagccctg agctggcgct accctgtgcag ggccctctgg 3487

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cctgcccgcc ctccctcctg cctgcgcagc tcttcccta ggcacctctg tgctgcgtcc 3607

caccagcctg agcaagacgc cctctcgggg cctgtgccgc actagcctcc ctctcctctg 3667

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aagcaagctc ttctcctcag cttggggcag ccattggcct ctgtctcggt ttgggaaacc 3787

aaggtcagga ggccgttgca gacataaatc tcggcgactc ggccccgtct cctgagggtc 3847

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 aacggtgcta acccgcgtctg ctccctccctc ccgcagagac tggggcctgg actggacatg 4027
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 tttgtcctt ctgtgttttt ttctgaacca tatccatgtt gctgactttt ccaaataaag 4207
 gttttcactc ctcaaaaaaa aaaaaaaaag ggcggccgct ctagagtatc cctcgagggg 4267
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 aagctaggga cgtttcagcg acag 4351

<210> 11
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (864) .. (1424)

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 cggcgcgagg cgtaaggggc gtggcgccag tgggcgtggc gtggcgagc gcaaggggac 180
 gcggtgcgca tgcgcgtgag ggcttcacg ggtgggtggg atcgaggcct gtcgggtcag 240
 ggcggttcgc ggggtgctgtc agagctgggc cggggcccct aggcaggccc agacatgtcc 300
 gtccttgtaa gttaaaagct tccatgggag ccttccttcc taatcaagat gcaaatagta 360
 cggatttccg aacagacact aaaaatagct gtcactcaa agaatccagt gcttgtgtca 420
 cagtatgaga aagtagatgc tggggaacag cgtttaatga atgaggcatg caagccagcc 480
 agtgatctct ttggaccttg cattctccat cagattggat cacctcccac cctgaggccc 540
 cccaagactt tgaacagttc ttcagtcatc cttacagaaa gataccctct ccagacaaac 600
 gcagtattta tatacgggcc attggatctc tatgaagcac cagaattatc agtgaagaat 660
 atattaaatg gctcacgggc tactgtaaaag catatttcta tcgcttgaga gtaaaactcc 720
 tagaaccagt tcctgtttct gtaacaagat gttcctttag agtcaatgag aacacacaca 780

acctacaaat tcatgcaggg gacatcctga agttcttgaa aaagaagaaa cctgaagatg 840

ccttctgtgt tgtgggaata aca atg att gat ctt tac cca aga gac tcg 890
Met Ile Asp Leu Tyr Pro Arg Asp Ser
1 5

tgg aat ttt gtc ttt gga cag gcc tct ttg aca gat ggt gtg ggg ata 938
Trp Asn Phe Val Phe Gly Gln Ala Ser Leu Thr Asp Gly Val Gly Ile
10 15 20 25

ttc agc ttt gcc agg tat ggc agt gat ttt tat agc atg cac tat aaa 986
Phe Ser Phe Ala Arg Tyr Gly Ser Asp Phe Tyr Ser Met His Tyr Lys
30 35 40

ggc aaa gtg aag aag ctc aag aaa aca tct tca agt gac tat tca att 1034
Gly Lys Val Lys Lys Leu Lys Lys Thr Ser Ser Ser Asp Tyr Ser Ile
45 50 55

ttc gac aac tat tat att cca gaa ata act agt gtt tta cta ctt cga 1082
Phe Asp Asn Tyr Tyr Ile Pro Glu Ile Thr Ser Val Leu Leu Leu Arg
60 65 70

tcc tgt aag act tta acc cat gag atc gga cac ata ttt gga ctg cga 1130
Ser Cys Lys Thr Leu Thr His Glu Ile Gly His Ile Phe Gly Leu Arg
75 80 85

cac tgc cag tgg ctt gca tgc ctc atg caa ggc tcc aac cac ttg gaa 1178
His Cys Gln Trp Leu Ala Cys Leu Met Gln Gly Ser Asn His Leu Glu
90 95 100 105

gaa gct gac cgg cgc cct cta aac ctt tgc cct atc tgt ttg cac aag 1226
Glu Ala Asp Arg Arg Pro Leu Asn Leu Cys Pro Ile Cys Leu His Lys
110 115 120

ttg cag tgt gct gtt ggc ttc agc att gta gaa aga tac aaa gca ctg 1274
Leu Gln Cys Ala Val Gly Phe Ser Ile Val Glu Arg Tyr Lys Ala Leu
125 130 135

gtg agg tgg att gat gat gaa tct tct gac aca cct gga gca act cca 1322
Val Arg Trp Ile Asp Asp Glu Ser Ser Asp Thr Pro Gly Ala Thr Pro
140 145 150

gaa cac agt cac gag gat aat ggg aat tta ccg aaa ccc gtg gaa gcc 1370
Glu His Ser His Glu Asp Asn Gly Asn Leu Pro Lys Pro Val Glu Ala
155 160 165

ttt aag gaa tgg aaa gag tgg ata ata aaa tgc ctg gct gtt ctc caa 1418
Phe Lys Glu Trp Lys Glu Trp Ile Ile Lys Cys Leu Ala Val Leu Gln
170 175 180 185

aaa tga ggaccttcaa ataggagtga ttgaaataaa taactacttg catgttatgc 1474
Lys *

tttcatttgg gtggaatact tcattggaat aaactactga tcttgtgctg tgtcaaagta 1534

acagactaga accttctttc aagtacctga attgaaatga aactcatttt gaataataaa 1594

aactctagaa actcttataaa aaaaaaaaa

1622

<210> 12
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<212> DNA
<213> Homo sapiens

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<222> (147)..(284)

<400> 12

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aaaaaaaaag gaaaaccac agccaacatt atcactagt gtaacagga aaatgtcccc	120
tttgaccccc accccaagta cagaac atg caa gga cgc ctg ttc tca ctg cat	173
Met Gln Gly Arg Leu Phe Ser Leu His	
1 5	
gtc ttc tgt gtt gta ctg aag ctc cta gct ggt gca gtg agg caa gac	221
Val Phe Cys Val Val Leu Lys Leu Leu Ala Gly Ala Val Arg Gln Asp	
10 15 20 25	
aaa gaa agg aaa tat agg tgc act ggg aag gaa gaa gaa aca ctg cct	269
Lys Glu Arg Lys Tyr Arg Cys Thr Gly Lys Glu Glu Glu Thr Leu Pro	
30 35 40	
tta ttc ttt agg tga catgattgtg tgcttttataa ataataaagg aatcaacaga	324
Leu Phe Phe Arg *	
45	
aaagttgctt aacctaataga atgagtttat caaagtcaca agatacaagg tcagtataca	384
aaaatcagtt ggatttctac atggtagaaa caactgtaca tggaaaaatg tttaatagt	444
taagatatgt acattggaaa ctatgaaaga gtgtaaaaaa taaagaagtg aaataaatgg	504
agaagatacc accttgatgg atggaagcct taaggtaaag atgctcattc tccccacact	564
gacctgtaca ttccccacag gcctaatacaa aacccccaca ggcttctgtg tagaaattga	624
catgctgatc ctgaaattta tatgaaaatg caaagagtct ggaataacca aaataatttt	684
gtaaaagaac aaagaagact tctactacct gggtataaga cttctctgaa gcacagaagt	744
caaggcagtg tgggtggtggc ataagtaatg taaatcatcc aggtgtggtg gctcaagcca	804
gtcatccagc actttgggag gctgaggcag gagaatcgct agagcccagg agttggaaac	864
cagcctgggc agcatagc	882

<210> 13
 <211> 442
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (58)..(336)

<400> 13

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atg tac ata aag cca tct acc agg aaa tca ggc tac tca cct cag cag      105
Met Tyr Ile Lys Pro Ser Thr Arg Lys Ser Gly Tyr Ser Pro Gln Gln
   1             5             10             15

gta gct gtg atc cac tgc aaa gga cat caa aaa gaa aac acg gcc gtt      153
Val Ala Val Ile His Cys Lys Gly His Gln Lys Glu Asn Thr Ala Val
           20           25           30

gcc cat agt aac cag aaa gct gat tca gca gct cag gtc act gcc aga      201
Ala His Ser Asn Gln Lys Ala Asp Ser Ala Ala Gln Val Thr Ala Arg
           35           40           45

ctt tca gtc acg cct cca aac ttg ctg ccc aca gtc tcc ttt cca cag      249
Leu Ser Val Thr Pro Pro Asn Leu Leu Pro Thr Val Ser Phe Pro Gln
           50           55           60

cca gat ctg cct gac aat ccc gta tac tca aca aca aca gaa aaa ctg      297
Pro Asp Leu Pro Asp Asn Pro Val Tyr Ser Thr Thr Thr Glu Lys Leu
           65           70           75           80

gct tca gat ctc aga gcc aat aaa aat cag gaa agt tag tagattcttc      346
Ala Ser Asp Leu Arg Ala Asn Lys Asn Gln Glu Ser *
           85           90

ctgactctgg aatcttcata ccctgaactt aaaccagtta cctacagtct accacccatt      406

taagaagagc aaagttacct cagctcctcc ggagggg      442
  
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 <211> 2058
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (173)..(1909)

<400> 14

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aggagcctgt ccagggactc tgcattgctg ctgcagagag ggatgtactc gg	atg Met 1	175
tgg ccc aga gct gcc cac ctc cca ggt acc cgc tgg cat ggc cgg ccc Trp Pro Arg Ala Ala His Leu Pro Gly Thr Arg Trp His Gly Arg Pro		223
5 10 15		
aca ggg cat ccc ccc cca ccc cca atg agc ctg ccc gcc tca gcc atg Thr Gly His Pro Pro Pro Pro Pro Met Ser Leu Pro Ala Ser Ala Met		271
20 25 30		
cct gtt gag ggg gtg ggg ggg gat gcc ctg tgg gcc ggc cat gcc agc Pro Val Glu Gly Val Gly Gly Asp Ala Leu Trp Ala Gly His Ala Ser		319
35 40 45		
ggg tac ctg gga ggt ggc cag ctc tgg gcc aca tcc gag tac atc cct Gly Tyr Leu Gly Gly Gly Gln Leu Trp Ala Thr Ser Glu Tyr Ile Pro		367
50 55 60 65		
ctc tgc agc agc aat gca gag tcc ctg gac agg ctc ctg cca cct gtg Leu Cys Ser Ser Asn Ala Glu Ser Leu Asp Arg Leu Leu Pro Pro Val		415
70 75 80		
ggc act ggg cgc tct ccc cgg aag cgg acc acc agc cag tgc aag tca Gly Thr Gly Arg Ser Pro Arg Lys Arg Thr Thr Ser Gln Cys Lys Ser		463
85 90 95		
gag cct ccc ctg ctg cgt aca agc aag cgt acc atc tac acc gcc ggg Glu Pro Pro Leu Leu Arg Thr Ser Lys Arg Thr Ile Tyr Thr Ala Gly		511
100 105 110		
cgg ccg ccc tgg tac aat gaa cac ggc acg caa tcc aaa gag gcc ttc Arg Pro Pro Trp Tyr Asn Glu His Gly Thr Gln Ser Lys Glu Ala Phe		559
115 120 125		
gcc atc ggc ttg gga ggc ggc agt gcc tct ggg aag acc act gtg gcc Ala Ile Gly Leu Gly Gly Gly Ser Ala Ser Gly Lys Thr Thr Val Ala		607
130 135 140 145		
aga atg atc atc gag gcc ctg gat gtg ccc tgg gtg gtc ttg ctg tcc Arg Met Ile Ile Glu Ala Leu Asp Val Pro Trp Val Val Leu Leu Ser		655
150 155 160		
atg gac tcc ttc tac aag gtg ctg act gag cag cag cag gaa cag gcc Met Asp Ser Phe Tyr Lys Val Leu Thr Glu Gln Gln Gln Glu Gln Ala		703
165 170 175		
gca cac aac aac ttc aac ttc gac cac cca gat gcc ttt gac ttc gac Ala His Asn Asn Phe Asn Phe Asp His Pro Asp Ala Phe Asp Phe Asp		751
180 185 190		
ctc atc att tcc acc ctc aag aag ctg aag cag ggg aag agt gtc aag Leu Ile Ile Ser Thr Leu Lys Lys Leu Lys Gln Gly Lys Ser Val Lys		799
195 200 205		

gtg ccc att tat gac ttc acc acg cac agc cgg aag aag gac tgg aaa	847
Val Pro Ile Tyr Asp Phe Thr Thr His Ser Arg Lys Lys Asp Trp Lys	
210 215 220 225	
aca ctg tat ggt gca aac gtc atc atc ttt gag ggc atc atg gcc ttt	895
Thr Leu Tyr Gly Ala Asn Val Ile Ile Phe Glu Gly Ile Met Ala Phe	
230 235 240	
gct gac aag aca ctg ttg gag ctc ctg gac atg aag atc ttt gtg gac	943
Ala Asp Lys Thr Leu Leu Glu Leu Leu Asp Met Lys Ile Phe Val Asp	
245 250 255	
aca gac tcc gac atc cgc ctg gta cgg cgg ctg cgc cgg gac atc agt	991
Thr Asp Ser Asp Ile Arg Leu Val Arg Arg Leu Arg Arg Asp Ile Ser	
260 265 270	
gag cgc ggc cgg gac atc gag ggt gtc atc aag cag tac aac aag ttt	1039
Glu Arg Gly Arg Asp Ile Glu Gly Val Ile Lys Gln Tyr Asn Lys Phe	
275 280 285	
gtc aag ccc tcc ttc gac cag tac atc cag ccc acc atg cgc ctg gca	1087
Val Lys Pro Ser Phe Asp Gln Tyr Ile Gln Pro Thr Met Arg Leu Ala	
290 295 300 305	
gac atc gtg gtc ccc aga ggg agc ggc aac acg gtg gcc atc gac ctg	1135
Asp Ile Val Val Pro Arg Gly Ser Gly Asn Thr Val Ala Ile Asp Leu	
310 315 320	
att gtg cag cac gtg cac agc cag ctg gag gag cgt gaa ctc agc gtc	1183
Ile Val Gln His Val His Ser Gln Leu Glu Glu Arg Glu Leu Ser Val	
325 330 335	
agg gct gcg ctg gcc tcg gca cac cag tgc cac ccg ctg ccc cgg acg	1231
Arg Ala Ala Leu Ala Ser Ala His Gln Cys His Pro Leu Pro Arg Thr	
340 345 350	
ctg agc gtc ctg aag agc acg ccg cag gta cgg ggc atg cac acc atc	1279
Leu Ser Val Leu Lys Ser Thr Pro Gln Val Arg Gly Met His Thr Ile	
355 360 365	
atc agg gac aag gag acc agt cgc gac gag ttc atc ttc tac tcc aag	1327
Ile Arg Asp Lys Glu Thr Ser Arg Asp Glu Phe Ile Phe Tyr Ser Lys	
370 375 380 385	
aga ctg atg cgg ctg ctc atc gag cac gcg ctc tcc ttc ctg ccc ttt	1375
Arg Leu Met Arg Leu Leu Ile Glu His Ala Leu Ser Phe Leu Pro Phe	
390 395 400	
cag gac tgc gtc gta cag acc ccg cag ggg cag gac tat gcg ggc aag	1423
Gln Asp Cys Val Val Gln Thr Pro Gln Gly Gln Asp Tyr Ala Gly Lys	
405 410 415	
tgc tat gcg ggg aag cag atc acc ggt gtg tcc att ctg cgc gcc ggt	1471
Cys Tyr Ala Gly Lys Gln Ile Thr Gly Val Ser Ile Leu Arg Ala Gly	
420 425 430	
gaa acc atg gag ccc gcg ctg cgc gct gtg tgc aaa gac gtg cgc atc	1519

Glu Thr Met Glu Pro Ala Leu Arg Ala Val Cys Lys Asp Val Arg Ile
 435 440 445

ggc acc atc ctc atc cag acc aac cag ctt acc ggg gag ccc gag ctc 1567
 Gly Thr Ile Leu Ile Gln Thr Asn Gln Leu Thr Gly Glu Pro Glu Leu
 450 455 460 465

cac tac ctg agg ctg ccc aag gac atc agc gat gac cac gtg atc ctc 1615
 His Tyr Leu Arg Leu Pro Lys Asp Ile Ser Asp Asp His Val Ile Leu
 470 475 480

atg gac tgc acc gtg tcc acg ggc gcg gcg gcc atg atg gca gtg cgc 1663
 Met Asp Cys Thr Val Ser Thr Gly Ala Ala Ala Met Met Ala Val Arg
 485 490 495

gtg ctc ctg gac cac gac gtg cct gag gac aag atc ttt ttg ctg tcg 1711
 Val Leu Leu Asp His Asp Val Pro Glu Asp Lys Ile Phe Leu Leu Ser
 500 505 510

ctg ctc atg gca gag atg ggc gtg cac tca gtg gcc tat gca ttt ccg 1759
 Leu Leu Met Ala Glu Met Gly Val His Ser Val Ala Tyr Ala Phe Pro
 515 520 525

cga gtg aga atc atc acc acg gcg gtg gac aag cgg gtc aat gac ctt 1807
 Arg Val Arg Ile Ile Thr Thr Ala Val Asp Lys Arg Val Asn Asp Leu
 530 535 540 545

ttc cgc atc atc cca ggc att ggg aac ttt ggc gac cgc tac ttt ggg 1855
 Phe Arg Ile Ile Pro Gly Ile Gly Asn Phe Gly Asp Arg Tyr Phe Gly
 550 555 560

aca gac gcg gtc ccc gat ggc agt gac gag gag gaa gtg gcc tac acg 1903
 Thr Asp Ala Val Pro Asp Gly Ser Asp Glu Glu Glu Val Ala Tyr Thr
 565 570 575

ggg tag ctgcccagtg agccatcccg tccccaccac cctcctcctg cctcctgacc 1959
 Gly *

caggactgct gaatacaaag atgttaattt ttaaaatggt actagtataa tttattctat 2019

gcattttata aaataaataa agcttttagaa aaaaaaaaaa 2058

<210> 15
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (545) .. (1672)

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 acccaggcgc gcccgcgcgc gcgcccggcc ccgtccctgc ctggaagcac agctgaagat 180
 ggcgagcccg gcgcctccgg agcacgccga ggagggatgc ccggctcctg ccgccgagga 240
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 ggaggaagcg caggaagctg gggcggcgga gggcgcgggg ttgcaggtgg aggaggccgc 360
 gggccggggc gcggccgcgcg taacctggct gctcggggag ccggtgctgt ggctgggctg 420
 ccgcgcgcac gagctgctga gctggaagag gccgctgcgg agcctgctcg gcttcgtcgc 480
 tgccaacctg ctgtttctggt tccttgcat gactccatgg agagtatatc acctgatttc 540
 cgtc atg ata ctt ggg cgt gtt att atg caa ata ata aag gat atg gtt 589
 Met Ile Leu Gly Arg Val Ile Met Gln Ile Ile Lys Asp Met Val
 1 5 10 15
 ttg tct aga aca aga ggt gca cag ttg tgg aga agc ctc agt gaa agc 637
 Leu Ser Arg Thr Arg Gly Ala Gln Leu Trp Arg Ser Leu Ser Glu Ser
 20 25 30
 tgg gaa gtt atc aat tcc aaa cca gat gaa aga ccc agg ctc agc cac 685
 Trp Glu Val Ile Asn Ser Lys Pro Asp Glu Arg Pro Arg Leu Ser His
 35 40 45
 tgt att gca gaa tca tgg atg aat ttc agc ata ttt ctt caa gaa atg 733
 Cys Ile Ala Glu Ser Trp Met Asn Phe Ser Ile Phe Leu Gln Glu Met
 50 55 60
 tct ctt ttt aaa cag cag agc cct ggc aag ttt tgt ctc ctg gtc tgt 781
 Ser Leu Phe Lys Gln Gln Ser Pro Gly Lys Phe Cys Leu Leu Val Cys
 65 70 75
 agt gtg tgc aca ttt ttt acg atc ttg gga agt tac att cct ggg gtt 829
 Ser Val Cys Thr Phe Phe Thr Ile Leu Gly Ser Tyr Ile Pro Gly Val
 80 85 90 95
 ata ctc agc tat cta ctg tta ctg tgt gca ttt ttg tgt cca ttg ttt 877
 Ile Leu Ser Tyr Leu Leu Leu Leu Cys Ala Phe Leu Cys Pro Leu Phe
 100 105 110
 aaa tgt aat gat att gga caa aaa att tac agc aaa att aag tca gtt 925
 Lys Cys Asn Asp Ile Gly Gln Lys Ile Tyr Ser Lys Ile Lys Ser Val
 115 120 125
 ctg ctg aaa ctg gat ttt gga att gga gaa tat att aat cag aag aaa 973
 Leu Leu Lys Leu Asp Phe Gly Ile Gly Glu Tyr Ile Asn Gln Lys Lys
 130 135 140
 cgt gag aga tct gaa gca gat aaa gaa aaa agt cac aaa gat gac agt 1021
 Arg Glu Arg Ser Glu Ala Asp Lys Glu Lys Ser His Lys Asp Asp Ser
 145 150 155

gaa tta gac ttt tca gct ctt tgt cct aag att agc ctc acg gtt gct	1069
Glu Leu Asp Phe Ser Ala Leu Cys Pro Lys Ile Ser Leu Thr Val Ala	
160 165 170 175	
gcc aaa gag tta tct gtg tct gac aca gac gtc tca gag gta tcc tgg	1117
Ala Lys Glu Leu Ser Val Ser Asp Thr Asp Val Ser Glu Val Ser Trp	
180 185 190	
act gat aat ggg acc ttc aac ctt tca gaa gga tac act cca cag aca	1165
Thr Asp Asn Gly Thr Phe Asn Leu Ser Glu Gly Tyr Thr Pro Gln Thr	
195 200 205	
gac act tct gat gat ctt gac cga ccc agt gag gaa gtt ttc tct aga	1213
Asp Thr Ser Asp Asp Leu Asp Arg Pro Ser Glu Glu Val Phe Ser Arg	
210 215 220	
gat ctt tca gat ttt cca tct cta gaa aat ggc atg gga aca aat gat	1261
Asp Leu Ser Asp Phe Pro Ser Leu Glu Asn Gly Met Gly Thr Asn Asp	
225 230 235	
gaa gat gaa tta agc ctt ggt ttg ccc act gag ctc aag aga aag aag	1309
Glu Asp Glu Leu Ser Leu Gly Leu Pro Thr Glu Leu Lys Arg Lys Lys	
240 245 250 255	
gaa cag ttg gac agt ggt cac aga cca agc aaa gag acg caa tca gca	1357
Glu Gln Leu Asp Ser Gly His Arg Pro Ser Lys Glu Thr Gln Ser Ala	
260 265 270	
gct ggt ctc acc ctt cct ctg aac agt gac caa acc ttt cac ctg atg	1405
Ala Gly Leu Thr Leu Pro Leu Asn Ser Asp Gln Thr Phe His Leu Met	
275 280 285	
agc aac ctg gct ggg gat gtt atc aca gct gca gtg act gca gct atc	1453
Ser Asn Leu Ala Gly Asp Val Ile Thr Ala Ala Val Thr Ala Ala Ile	
290 295 300	
aaa gac cag tta gag ggt gtg cag caa gca ctt tct cag gct gcc ccc	1501
Lys Asp Gln Leu Glu Gly Val Gln Gln Ala Leu Ser Gln Ala Ala Pro	
305 310 315	
atc cca gaa gag gac aca gac act gaa gaa ggt gat gac ttt gaa cta	1549
Ile Pro Glu Glu Asp Thr Asp Thr Glu Glu Gly Asp Asp Phe Glu Leu	
320 325 330 335	
ctt gac cag tca gag ctg gat caa att gag agt gaa ttg gga ctt aca	1597
Leu Asp Gln Ser Glu Leu Asp Gln Ile Glu Ser Glu Leu Gly Leu Thr	
340 345 350	
caa gac cag gaa gca gaa gca cag caa aat aag aag tct tca ggt ttc	1645
Gln Asp Gln Glu Ala Glu Ala Gln Gln Asn Lys Lys Ser Ser Gly Phe	
355 360 365	
ctt tca aat ctg ctg gga ggc cat taa tctag gaatcagctt gcaacagagc	1697
Leu Ser Asn Leu Leu Gly Gly His *	
370 375	
acaaaaaa	1705

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tct gtc tgc ctc acc ttt gcc ttc ctc ttc ctg ctg ctg gcc atg ctg Ser Val Cys Leu Thr Phe Ala Phe Leu Phe Leu Leu Leu Ala Met Leu 170 175 180	702
gtg caa gtg gtg cgg gag gag acc ctc gag ctg ggc ctg gag cct ggt Val Gln Val Val Arg Glu Glu Thr Leu Glu Leu Gly Leu Glu Pro Gly 185 190 195	750
ctg gcc agc atg acc cag aac tta gag cca ctt ctg aag aag cag ggc Leu Ala Ser Met Thr Gln Asn Leu Glu Pro Leu Leu Lys Lys Gln Gly 200 205 210 215	798
tgg gac tgg gcg ctt cct gtg gcc aag ctg gct atc cgc gtg gga ctg Trp Asp Trp Ala Leu Pro Val Ala Lys Leu Ala Ile Arg Val Gly Leu 220 225 230	846
gca gtg gtg ggc tct gtg ctg ggt gcc ttc ctc acc ttc cca ggc ctg Ala Val Val Gly Ser Val Leu Gly Ala Phe Leu Thr Phe Pro Gly Leu 235 240 245	894
cgg ctg gcc cag acc cac cgg gac gca ctg acc atg tgc gag gac aga Arg Leu Ala Gln Thr His Arg Asp Ala Leu Thr Met Ser Glu Asp Arg 250 255 260	942
ccc atg ctg cag ttc ctc ctg cac acc agc ttc ctg tct ccc ctg ttc Pro Met Leu Gln Phe Leu Leu His Thr Ser Phe Leu Ser Pro Leu Phe 265 270 275	990
atc ctg tgg ctc tgg aca aag ccc att gca cgg gac ttc ctg cac cag Ile Leu Trp Leu Trp Thr Lys Pro Ile Ala Arg Asp Phe Leu His Gln 280 285 290 295	1038
ccg ccg ttt ggg gag acg cgt ttc tcc ctg ctg tcc gat tct gcc ttc Pro Pro Phe Gly Glu Thr Arg Phe Ser Leu Leu Ser Asp Ser Ala Phe 300 305 310	1086
gac tct ggg cgc ctc tgg ttg ctg gtg gtg ctg tgc ctg ctg cgg ctg Asp Ser Gly Arg Leu Trp Leu Leu Val Val Leu Cys Leu Leu Arg Leu 315 320 325	1134
gcg gtg acc cgg ccc cac ctg cag gcc tac ctg tgc ctg gcc aag gcc Ala Val Thr Arg Pro His Leu Gln Ala Tyr Leu Cys Leu Ala Lys Ala 330 335 340	1182
cgg gtg gag cag ctg cga agg gag gct ggc cgc atc gaa gcc cgt gaa Arg Val Glu Gln Leu Arg Arg Glu Ala Gly Arg Ile Glu Ala Arg Glu 345 350 355	1230
atc cag cag agg gtg gtc cga gtc tac tgc tat gtg acc gtg gtg agc Ile Gln Gln Arg Val Val Arg Val Tyr Cys Tyr Val Thr Val Val Ser 360 365 370 375	1278

ttg cag tac ctg acg ccg ctc atc ctc acc ctc aac tgc aca ctt ctg	1326
Leu Gln Tyr Leu Thr Pro Leu Ile Leu Thr Leu Asn Cys Thr Leu Leu	
380 385 390	
ctc aag acg ctg gga ggc tat tcc tgg ggc ctg ggc cca gct cct cta	1374
Leu Lys Thr Leu Gly Gly Tyr Ser Trp Gly Leu Gly Pro Ala Pro Leu	
395 400 405	
cta tcc ccc gac cca tcc tca gcc agc gct gcc ccc atc ggc tct ggg	1422
Leu Ser Pro Asp Pro Ser Ser Ala Ser Ala Ala Pro Ile Gly Ser Gly	
410 415 420	
gag gac gaa gtc cag cag act gca gcg cgg att gcc ggg gct ctg ggt	1470
Glu Asp Glu Val Gln Gln Thr Ala Ala Arg Ile Ala Gly Ala Leu Gly	
425 430 435	
ggc ctg ctt act ccc ctc ttc ctc cgt ggc gtc ctg gcc tac ctc atc	1518
Gly Leu Leu Thr Pro Leu Phe Leu Arg Gly Val Leu Ala Tyr Leu Ile	
440 445 450 455	
tgg tgg acg gct gcc tgc cag ctg ctc gcc agc ctt ttc ggc ctc tac	1566
Trp Trp Thr Ala Ala Cys Gln Leu Leu Ala Ser Leu Phe Gly Leu Tyr	
460 465 470	
ttc cac cag cac ttg gca ggc tcc tag ctgcc tgcagaccct cctggggccc	1618
Phe His Gln His Leu Ala Gly Ser *	
475 480	
tgaggtctgt tcctgggggca gcgggacact agcctgcccc ctctgtttgc gccccgtgt	1678
ccccagctgc aaggtggggc cggactcccc ggcgttcct tcaccacagt gcctgacccg	1738
cgccccccct tggacgccga gtttctgcct cagaactgtc tctcctgggc ccagcagcat	1798
gaggggtcccg aggccattgt ctccgaagcg tatgtgccag gtttgagtgg cgaggggtgat	1858
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 <213> Homo sapiens

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atg aaa gct gcg gtg ctg acc ttg gcc gtg ctc ttc ctg acg ggg agc	108
Met Lys Ala Ala Val Leu Thr Leu Ala Val Leu Phe Leu Thr Gly Ser	
1 5 10 15	

cag gct cgg cat ttc tgg cag caa gat gaa ccc ccc cag agc ccc tgg Gln Ala Arg His Phe Trp Gln Gln Asp Glu Pro Pro Gln Ser Pro Trp	156
20 25 30	
gat cga gtg aag gac ctg gcc act gtg tac gtg gat gtg ctc aaa gac Asp Arg Val Lys Asp Leu Ala Thr Val Tyr Val Asp Val Leu Lys Asp	204
35 40 45	
agc ggc aaa gac agc gtg acc tcc acc ttc agc aag ctg cgc gaa cag Ser Gly Lys Asp Ser Val Thr Ser Thr Phe Ser Lys Leu Arg Glu Gln	252
50 55 60	
ctc ggc cct gtg acc cag gag ttc tgg gat aac ctg gaa aag gag aca Leu Gly Pro Val Thr Gln Glu Phe Trp Asp Asn Leu Glu Lys Glu Thr	300
65 70 75 80	
gag ggc ctg agg cag gag atg agc aag gat ctg gag gag gtg aag gcc Glu Gly Leu Arg Gln Glu Met Ser Lys Asp Leu Glu Glu Val Lys Ala	348
85 90 95	
aag gtg cag ccc tac ctg gac gac ttc cag aag aag tgg cag gag gag Lys Val Gln Pro Tyr Leu Asp Asp Phe Gln Lys Lys Trp Gln Glu Glu	396
100 105 110	
atg gag ctc tac cgc cag aag gtg gag ccg ctg cgc gca gag ctc caa Met Glu Leu Tyr Arg Gln Lys Val Glu Pro Leu Arg Ala Glu Leu Gln	444
115 120 125	
gag ggc gcg cgc cag aag ctg cac gag ctg caa gag aag ctg agc cca Glu Gly Ala Arg Gln Lys Leu His Glu Leu Gln Glu Lys Leu Ser Pro	492
130 135 140	
ctg ggc gag gag atg cgc gac cgc gcg cgc gcc cat gtg gac gcg ctg Leu Gly Glu Glu Met Arg Asp Arg Ala Arg Ala His Val Asp Ala Leu	540
145 150 155 160	
cgc acg cat ctg gcc ccc tac agc gac gag ctg cgc cag cgc ttg gcc Arg Thr His Leu Ala Pro Tyr Ser Asp Glu Leu Arg Gln Arg Leu Ala	588
165 170 175	
gcg cgc ctt gag gct ctc aag gag aac ggc ggc gcc aga ctg gcc gag Ala Arg Leu Glu Ala Leu Lys Glu Asn Gly Gly Ala Arg Leu Ala Glu	636
180 185 190	
tac cac gcc aag gcc acc gag cat ctg agc acg ctc agc gag aag gcc Tyr His Ala Lys Ala Thr Glu His Leu Ser Thr Leu Ser Glu Lys Ala	684
195 200 205	
aag ccc gcg ctc gag gac ctc cgc caa ggc ctg ctg ccc gtg ctg gag Lys Pro Ala Leu Glu Asp Leu Arg Gln Gly Leu Leu Pro Val Leu Glu	732
210 215 220	
agc ttc aag gtc agc ttc ctg agc gct ctc gag gag tac act aag aag Ser Phe Lys Val Ser Phe Leu Ser Ala Leu Glu Tyr Thr Lys Lys	780
225 230 235 240	
ctc aac acc cag tga ggcgcgcgcc gccgcgcgcgc ttcccggtgc tcagaataaa	835

Leu Asn Thr Gln *

245

cgtttcctaaa gtgggaaaaa aaaa

859

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<211> 2454

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (154) .. (1710)

<400> 18

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gcgtgatacct agctccttgt ggcagagcct agagagaagg cgaggacgct gaagaaccag 120

gcggacagct ggcagagaga gaagttggct agc atg gaa tca cca gag gag cct 174
Met Glu Ser Pro Glu Glu Pro
1 5

gga gca tcc atg gat gag aac tac ttt gtg aac tac act ttc aaa gat 222
Gly Ala Ser Met Asp Glu Asn Tyr Phe Val Asn Tyr Thr Phe Lys Asp
10 15 20

cgg tca cat tca ggc cgt gtg gct caa ggc atc atg aaa ctg tgt cta 270
Arg Ser His Ser Gly Arg Val Ala Gln Gly Ile Met Lys Leu Cys Leu
25 30 35

gag gag gag ctc ttt gct gat gtc acc att tcg gtg gaa ggc cgg gag 318
Glu Glu Glu Leu Phe Ala Asp Val Thr Ile Ser Val Glu Gly Arg Glu
40 45 50 55

ttt cag ctc cat cgg ctg gtc ctc tca gct cag agc tgc ttc ttc cga 366
Phe Gln Leu His Arg Leu Val Leu Ser Ala Gln Ser Cys Phe Phe Arg
60 65 70

tcc atg ttc act tcc aac ctg aag gag gcc cac aac cgg gtg att gtg 414
Ser Met Phe Thr Ser Asn Leu Lys Glu Ala His Asn Arg Val Ile Val
75 80 85

ctg cag gat gtc agc gag tct gtt ttc cag ctc ctg gtt gat tat atc 462
Leu Gln Asp Val Ser Glu Ser Val Phe Gln Leu Leu Val Asp Tyr Ile
90 95 100

tac cat ggg act gtg aaa ctt cga gct gag gag ttg cag gaa att tat 510
Tyr His Gly Thr Val Lys Leu Arg Ala Glu Glu Leu Gln Glu Ile Tyr
105 110 115

gag gtg tca gac atg tat cag ctg aca tct ctc ttt gag gaa tgc tct 558
Glu Val Ser Asp Met Tyr Gln Leu Thr Ser Leu Phe Glu Glu Cys Ser
120 125 130 135

cgg ttt ttg gcc cgc aca gtg caa gtg gga aac tgc ctt cag gtg atg	606
Arg Phe Leu Ala Arg Thr Val Gln Val Gly Asn Cys Leu Gln Val Met	
140 145 150	
tgg ctg gca gat cgg cac agt gat cct gag ctc tat acg gct gcc aag	654
Trp Leu Ala Asp Arg His Ser Asp Pro Glu Leu Tyr Thr Ala Ala Lys	
155 160 165	
cac tgt gcc aag acc cac ctg gcc cag ctg cag aat aca gag gaa ttt	702
His Cys Ala Lys Thr His Leu Ala Gln Leu Gln Asn Thr Glu Glu Phe	
170 175 180	
ctc cac ttg ccc cac cgc tta ctc aca gat atc atc tcg gat gga gtt	750
Leu His Leu Pro His Arg Leu Leu Thr Asp Ile Ile Ser Asp Gly Val	
185 190 195	
ccg tgt tct cag aac cca aca gag gca ata gaa gcc tgg atc aac ttt	798
Pro Cys Ser Gln Asn Pro Thr Glu Ala Ile Glu Ala Trp Ile Asn Phe	
200 205 210 215	
aat aaa gag gaa aga gag gct ttt gca gag tca ctc agg aca agc ttg	846
Asn Lys Glu Glu Arg Glu Ala Phe Ala Glu Ser Leu Arg Thr Ser Leu	
220 225 230	
aag gaa att ggg gag aat gtg cac att tac ctg att ggg aaa gag tca	894
Lys Glu Ile Gly Glu Asn Val His Ile Tyr Leu Ile Gly Lys Glu Ser	
235 240 245	
tct cgt acc cac tcg ttg gct gtg tcc ttg cac tgt gca gaa gat gac	942
Ser Arg Thr His Ser Leu Ala Val Ser Leu His Cys Ala Glu Asp Asp	
250 255 260	
tcc atc agt gta agt ggc caa aac agt ttg tgc cac cag atc act gcg	990
Ser Ile Ser Val Ser Gly Gln Asn Ser Leu Cys His Gln Ile Thr Ala	
265 270 275	
gcc tgc aag cat ggt gga gac ttg tat gtg gtg gga ggg tcc atc cca	1038
Ala Cys Lys His Gly Gly Asp Leu Tyr Val Val Gly Gly Ser Ile Pro	
280 285 290 295	
cgg cgc atg tgg aag tgc aac aat gcc acc gtt gac tgg gag tgg tgt	1086
Arg Arg Met Trp Lys Cys Asn Asn Ala Thr Val Asp Trp Glu Trp Cys	
300 305 310	
gct cct ttg cct cgg gac cgg ctc cag cac acc ctg gtg tct gtg ccc	1134
Ala Pro Leu Pro Arg Asp Arg Leu Gln His Thr Leu Val Ser Val Pro	
315 320 325	
ggg aaa gat gcc ata tat tca ctg ggt ggc aag aca ctg caa gat acc	1182
Gly Lys Asp Ala Ile Tyr Ser Leu Gly Gly Lys Thr Leu Gln Asp Thr	
330 335 340	
ctc tcc aac gca gtc att tat tat cgc gta ggt gat aat gtg tgg aca	1230
Leu Ser Asn Ala Val Ile Tyr Tyr Arg Val Gly Asp Asn Val Trp Thr	
345 350 355	

gag aca act cag cta gag gtg gct gtg tca ggg gct gct ggt gcc aac 1278
 Glu Thr Thr Gln Leu Glu Val Ala Val Ser Gly Ala Ala Gly Ala Asn 375
 360 365 370

ctc aac ggg atc atc tac tta cta ggg ggg gag gag aat gat ctg gac 1326
 Leu Asn Gly Ile Ile Tyr Leu Leu Gly Gly Glu Glu Asn Asp Leu Asp 390
 380 385

ttc ttt acc aaa cct tcc cga ctc atc cag tgc ttt gac aca gag aca 1374
 Phe Phe Thr Lys Pro Ser Arg Leu Ile Gln Cys Phe Asp Thr Glu Thr 405
 395 400

gac aaa tgc cat gtg aag ccc tat gtg ctg ccc ttt gca ggc cgc atg 1422
 Asp Lys Cys His Val Lys Pro Tyr Val Leu Pro Phe Ala Gly Arg Met 420
 410 415

cac gca gct gtg cat aaa gat ctg gtg ttc atc gtg gct gaa ggg gac 1470
 His Ala Ala Val His Lys Asp Leu Val Phe Ile Val Ala Glu Gly Asp 435
 425 430

tcc ctg gtg tgc tac aat ccc ttg cta gac agc ttc acc cgg ctt tgc 1518
 Ser Leu Val Cys Tyr Asn Pro Leu Leu Asp Ser Phe Thr Arg Leu Cys 455
 440 445 450

ctt cct gag gcc tgg agc tct gcc cca tcc ctc tgg aag att gcc agc 1566
 Leu Pro Glu Ala Trp Ser Ser Ala Pro Ser Leu Trp Lys Ile Ala Ser 470
 460 465

tgt aac ggg agc atc tat gtc ttc cgg gac cga tat aaa aag ggg gat 1614
 Cys Asn Gly Ser Ile Tyr Val Phe Arg Asp Arg Tyr Lys Lys Gly Asp 485
 475 480

gcc aac acc tac aag ctt gac cct gcc act tca gcc gta act gtc aca 1662
 Ala Asn Thr Tyr Lys Leu Asp Pro Ala Thr Ser Ala Val Thr Val Thr 500
 490 495

aga ggt att aag gtg ctg ctt acc aat ttg cag ttt gtg ttg gcc taa 1710
 Arg Gly Ile Lys Val Leu Leu Thr Asn Leu Gln Phe Val Leu Ala * 515
 505 510

ggctgtgggg aggggaggag aactgctcac tccttttccc tccccataca aactcaaagt 1770

cccctggggc ccaattcaga gttatgtttt ttttggcaca tactagaaag gcagtgcctc 1830

agcccttccc tgaatccatg gaggtgttct gtttggggct ttttagactg ctgctgctca 1890

gctggttgct tgaactgaca gtaggccagc ctgttctctg ccattcccta gtcacctgt 1950

gcctcaccac agcttgctta gagcaagcct tttctcagac cttaggcaca gcctctcctc 2010

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aattgtactt ttgttctata gcctgtgaaa tggctagttg atcatttttc cacaaagaat 2130

taggtgttaa gagttttcct tcaggcttta cttaggagaa tggactaagc tgaagggtga 2190

cttcaccagc aagagtcaac tctagaattc aggatgttcc ttctattgtt ttcttagcca 2250

tctgtcagga aatgtaactt tgggttttatt tttggcttat tccaaggggt aagccagaaa 2310
 atagaaatga ttattttctga ttaatagcag aaactttttc aatctcaa atataaggtg 2370
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 gtttttgaag ggaaaaaaaa aaaa 2454

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<220>
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 <222> (106) .. (1860)

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 ctgcagccga ccctcctgca tctgggcacg ttcaggttgc gacac atg aag gct 114
 Met Lys Ala
 1
 ttg atg aac gag aag gcc cag gcc gcc ctg gtg gag ttt gtg gag gac 162
 Leu Met Asn Glu Lys Ala Gln Ala Ala Leu Val Glu Phe Val Glu Asp
 5 10 15
 gtc aat cac gct gcc att ccc agg gag atc cca cgc aag gat ggg gtc 210
 Val Asn His Ala Ala Ile Pro Arg Glu Ile Pro Arg Lys Asp Gly Val
 20 25 30 35
 tgg agg gtt ctg tgg aag gac cgt gcg cag gac acg agg gtc ctg agg 258
 Trp Arg Val Leu Trp Lys Asp Arg Ala Gln Asp Thr Arg Val Leu Arg
 40 45 50
 cag atg aca cgc ctg ctg ctg gat gac ggg ccc acg cag gcc gcg gag 306
 Gln Met Thr Arg Leu Leu Leu Asp Asp Gly Pro Thr Gln Ala Ala Glu
 55 60 65
 gct ggg acc ccc ggt gag gca ccc acc cct ccc gct tcg gag acg cag 354
 Ala Gly Thr Pro Gly Glu Ala Pro Thr Pro Pro Ala Ser Glu Thr Gln
 70 75 80
 gcc cag gat tct ggt gag gta aca ggg cat gct ggc tcg ctt ctt ggg 402
 Ala Gln Asp Ser Gly Glu Val Thr Gly His Ala Gly Ser Leu Leu Gly
 85 90 95
 gca ccc agg aac cca agg agg ggc cgt cgg ggt cgc aga aac aga acc 450
 Ala Pro Arg Asn Pro Arg Arg Gly Arg Arg Gly Arg Arg Asn Arg Thr
 100 105 110 115
 aga cgc aac agg ttg acc cag aag ggc aag aag aga agc cga gga gga 498

Arg Arg Asn Arg Leu Thr Gln Lys Gly Lys Lys Arg Ser Arg Gly Gly	120	125	130	
cgg ccg tct gct ccc gcg agg agt gag gcc gag gac tct tcc gac gag				546
Arg Pro Ser Ala Pro Ala Arg Ser Glu Ala Glu Asp Ser Ser Asp Glu	135	140	145	
agc ctg ggc atc gtg atc gag gag atc gac cag ggc gac ctg agc gga				594
Ser Leu Gly Ile Val Ile Glu Glu Ile Asp Gln Gly Asp Leu Ser Gly	150	155	160	
gaa gag gac cag agc gcg ctg tac gcc acg ctg cag gcc gct gcc agg				642
Glu Glu Asp Gln Ser Ala Leu Tyr Ala Thr Leu Gln Ala Ala Arg	165	170	175	
gag ctg gtt agg cag tgg gcg ccc tgc aac tcc gag ggg gaa gaa gac				690
Glu Leu Val Arg Gln Trp Ala Pro Cys Asn Ser Glu Gly Glu Glu Asp	180	185	190	
ggt ccc cgc gag ttc ttg gct ctg gtc acc gtc acc gac aaa tcg aag				738
Gly Pro Arg Glu Phe Leu Ala Leu Val Thr Val Thr Asp Lys Ser Lys	200	205	210	
aaa gaa gag gca gag aag gag cca gct ggg gcc gaa tcc atc cgc ttg				786
Lys Glu Glu Ala Glu Lys Glu Pro Ala Gly Ala Glu Ser Ile Arg Leu	215	220	225	
aac acc aaa gaa gac aaa aat ggt gtc ccc gac tta gtg gcc ctg ctg				834
Asn Thr Lys Glu Asp Lys Asn Gly Val Pro Asp Leu Val Ala Leu Leu	230	235	240	
gct gtg aga gac acc ccg gac gag gag ccg gtg gac agc gac act tcg				882
Ala Val Arg Asp Thr Pro Asp Glu Glu Pro Val Asp Ser Asp Thr Ser	245	250	255	
gag agc gac tcg cag gaa agt ggg gac caa gaa aca gag gag ttg gat				930
Glu Ser Asp Ser Gln Glu Ser Gly Asp Gln Glu Thr Glu Glu Leu Asp	260	265	270	
aat cct gag ttc gtg gcc att gtg gcc tat acc gac ccg tcg gac ccc				978
Asn Pro Glu Phe Val Ala Ile Val Ala Tyr Thr Asp Pro Ser Asp Pro	280	285	290	
tgg gcc ccg gag gag atg ttg aaa atc gct tct gtt atc gag tcg ctg				1026
Trp Ala Arg Glu Glu Met Leu Lys Ile Ala Ser Val Ile Glu Ser Leu	295	300	305	
ggc tgg agc gac gag aaa gac aag cga gac ccc ctc cga cag gtc ttg				1074
Gly Trp Ser Asp Glu Lys Asp Lys Arg Asp Pro Leu Arg Gln Val Leu	310	315	320	
tcc gtc atg tcc aag gac act aac ggg acc cgc gtg aag gtg gaa gag				1122
Ser Val Met Ser Lys Asp Thr Asn Gly Thr Arg Val Lys Val Glu Glu	325	330	335	
gcg ggc cgc gag gtg gac gcc gtg gtc ctg cgc aag gcc ggg gat gac				1170
Ala Gly Arg Glu Val Asp Ala Val Val Leu Arg Lys Ala Gly Asp Asp				

340	345	350	355	
ggg gac ctc cgg gag tgc att tcc acc ttg gcg cag ccg gat ctc cct				1218
Gly Asp Leu Arg Glu Cys Ile Ser Thr Leu Ala Gln Pro Asp Leu Pro	360	365	370	
ccc cag gcg aag aag gct ggg cgt ggc ctc ttc ggg ggc tgg agc gag				1266
Pro Gln Ala Lys Lys Ala Gly Arg Gly Leu Phe Gly Gly Trp Ser Glu	375	380	385	
cac cgt gag gac gaa ggg ggt ctt ctg gag ctg gtg gcg ctc ctg gct				1314
His Arg Glu Asp Glu Gly Gly Leu Leu Glu Leu Val Ala Leu Leu Ala	390	395	400	
gcc cag gac atg gcg gag gtg atg aag gag gaa aaa gaa aac gcc tgg				1362
Ala Gln Asp Met Ala Glu Val Met Lys Glu Glu Lys Glu Asn Ala Trp	405	410	415	
gaa ggc ggg aag tac aaa tac ccc aaa ggc aaa ctg ggg gag gta ttg				1410
Glu Gly Gly Lys Tyr Lys Tyr Pro Lys Gly Lys Leu Gly Glu Val Leu	420	425	430	435
gcg ctc ctg gcc gcc cgg gag aac atg ggg tcc aac gag ggg tcg gag				1458
Ala Leu Leu Ala Ala Arg Glu Asn Met Gly Ser Asn Glu Gly Ser Glu	440	445	450	
gag gct tcg gac gaa cag tcc gag gag gag tcg gag gac acc gag agc				1506
Glu Ala Ser Asp Glu Gln Ser Glu Glu Glu Ser Glu Asp Thr Glu Ser	455	460	465	
gag gcg tcg gag ccg gag gac agg gca tcc agg aag ccc cgg gcc aag				1554
Glu Ala Ser Glu Pro Glu Asp Arg Ala Ser Arg Lys Pro Arg Ala Lys	470	475	480	
agg gcg cgc acg gcc ccc agg ggc ctg act ccg gcc ggc gcg cct ccc				1602
Arg Ala Arg Thr Ala Pro Arg Gly Leu Thr Pro Ala Gly Ala Pro Pro	485	490	495	
acc gct tcc ggg gcc cgc aaa acc cgc gcg ggc ggc cga ggc cga ggc				1650
Thr Ala Ser Gly Ala Arg Lys Thr Arg Ala Gly Gly Arg Gly Arg Gly	500	505	510	515
cga ggc cgg ggc gtc act ccc gag aag aaa gcc ggg agc cgg ggc tcg				1698
Arg Gly Arg Gly Val Thr Pro Glu Lys Lys Ala Gly Ser Arg Gly Ser	520	525	530	
gcc cag gac gac gcc gca gga agc agg aag aag aag ggg agc gcg ggc				1746
Ala Gln Asp Asp Ala Ala Gly Ser Arg Lys Lys Lys Gly Ser Ala Gly	535	540	545	
tcc ggg gcc cat gcc agg gca ggc gag gcc aag ggc cag gcg ccc act				1794
Ser Gly Ala His Ala Arg Ala Gly Glu Ala Lys Gly Gln Ala Pro Thr	550	555	560	
gga tcc aag gcc gcg cgc ggg aag aag gcc cgt cgg ggc cgg agg ctg				1842
Gly Ser Lys Ala Ala Arg Gly Lys Lys Ala Arg Arg Gly Arg Arg Leu	565	570	575	

ccc cct aaa tgc cgc tag tggccc cccaagaagc cgcccaggct gcgagcaggc	1896
Pro Pro Lys Cys Arg *	
580 585	
cccgagggc acccgcccgc ctgtggcccc cgccctcccc tccccctctc ctgtcctccg	1956
cagacgcaat ctctcgctt cacagcgcg cggggccgcg ttttgccagc gtcacgttcc	2016
cctctcgggc cctcgcaggc cggggggcgcc agcgatcccc acggaggaag cccggatggg	2076
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agtggaccag gattgggggc ccgggttgcc cccggagggg gtgtgtgtgt ggacgccggg	2196
cacctgcaga ggcgagcagg gctcttcgtg gcgctctcgg ggctgcgcc tggcaggtgc	2256
tgtaggccgc tgtcgccctt accccagtct gactggggcc tgggtctgtg gtggaggctc	2316
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gaggggggag cagagggaag acacatgcca gccctgccta ctggggcgcc cctgataaca	2556
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gactgcagtg tttcccaaca ttctaattat ttgcagaggt gttcaatttg gggtaattca	2676
cttaaaatcc agttttgggt cttctgggct gactggggcc tggccccctc cataggctgt	2736
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gcccttacta aaagacttga aagtccctgg gttcaccccc tgagtgaatt aaaggccaga	2856
ggggccccga agggcactgt gagggacaga ggctcacctg ggagtgagc aagccggccg	2916
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 Thr Ile Asn Arg Glu Ala Phe Pro Ala His Lys Val Val Leu Ala Ala
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 Cys Ser Asp Tyr Phe Arg Ala Met Phe Thr Gly Gly Met Arg Glu Ala
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 Ser Gln Asp Val Ile Glu Leu Lys Gly Val Ser Ala Arg Gly Leu Arg
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cac atc atc gac ttc gcc tac agc gcc gag gtg aca ctg gac ctg gac 439
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 Asp Val Arg Leu Pro Ala Asn Leu Leu Tyr Lys Tyr Leu Asn Lys Ala
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Glu Phe Leu Asp Lys Glu Phe Thr Arg Ile Cys Leu Ala Trp Lys Thr	
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Phe Asn Thr Leu Glu Arg Ser Glu Met Leu Leu Leu Leu Arg Arg	
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Asp Thr Trp Leu Trp Leu Arg Ile Phe Leu Thr Asp Met Ile Ile Tyr	445	450	455	
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Gln Gly Gln Tyr Lys Lys Ala Ile Ala Ser Leu His His Leu Ala Ala	460	465	470	

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gag cat cag agg gcg ctc atc cag ctg gcg acg tgc cac ttt gcg cta Glu His Gln Arg Ala Leu Ile Gln Leu Ala Thr Cys His Phe Ala Leu 495 500 505	1660
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ttt gcc tac ttg aga act cag gaa ggt ggg aaa att cat ctg gaa tta Phe Ala Tyr Leu Arg Thr Gln Glu Gly Gly Lys Ile His Leu Glu Leu 635 640 645 650	2092
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gct gac agg cac cac act gta act cga ggc atc acc aaa ggc gtg aag Ala Asp Arg His His Thr Val Thr Arg Gly Ile Thr Lys Gly Val Lys 685 690 695	2236

gag gac ttt cgc ctg gcc atg gag cgc cag gtc tcc cgc tgt gga gag 2284
 Glu Asp Phe Arg Leu Ala Met Glu Arg Gln Val Ser Arg Cys Gly Glu
 700 705 710

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 Asn Leu Met Val Val Leu His Arg Phe Cys Ile Asn Glu Lys Ile Leu
 715 720 725 730

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 Leu Leu Gln Thr Leu Thr *
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 Met
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 Ala Ser Gly Ser Arg Trp Arg Pro Thr Pro Pro Pro Leu Leu Leu Leu
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 Leu Leu Leu Ala Leu Ala Ala Arg Ala Asp Gly Leu Glu Phe Gly Gly
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 Gly Pro Gly Gln Trp Ala Arg Tyr Ala Arg Trp Ala Gly Ala Ala Ser
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 Ser Gly Glu Leu Ser Phe Ser Leu Arg Thr Asn Ala Thr Arg Ala Leu
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ctg ctc tac ctg gac gac ggc ggc gac tgc gac ttc ctg gag ctg ctg 357
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ccg gcc acg ctg cag ctg gac acg ccg gtg gcc gac gac cgc tgg cac Pro Ala Thr Leu Gln Leu Asp Thr Pro Val Ala Asp Asp Arg Trp His 100 105 110			453
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Asp Asn Ala Trp His Asp Val Arg Val Thr Arg Asn Leu Arg Gln His	
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Ile Ser Val Asp Gly Ile Leu Thr Thr Thr Gly Tyr Thr Gln Glu Asp	
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Tyr Thr Met Leu Gly Ser Asp Asp Phe Phe Tyr Ile Gly Gly Ser Pro	
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Asn Thr Ala Asp Leu Pro Gly Ser Pro Val Ser Asn Asn Phe Met Gly	
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Cys Leu Lys Asp Val Val Tyr Lys Asn Asn Asp Phe Lys Leu Glu Leu	
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Leu Ser Phe Arg Cys Glu Asp Val Ala Ala Leu Asp Pro Val Thr Phe	
485 490 495	
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Glu Ser Pro Glu Ala Phe Val Ala Leu Pro Arg Trp Ser Ala Lys Arg	
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Thr Gly Ser Ile Ser Leu Asp Phe Arg Thr Thr Glu Pro Asn Gly Leu	
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Ser Ser Ala Gln Arg Ala Asp Tyr Phe Ala Met Glu Leu Leu Asp Gly	
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His Leu Tyr Leu Leu Leu Asp Met Gly Ser Gly Gly Ile Lys Leu Arg	
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Gln Arg Asp Gly Arg Lys Gly Ser Ile Ser Val Asn Ser Arg Ser Thr	
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Pro Phe Leu Ala Thr Gly Asp Ser Glu Ile Leu Asp Leu Glu Ser Glu	
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Val Arg Asp Leu Phe Ile Asp Gly Arg Ser Arg Asp Leu Arg Gly Leu	
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Thr Leu Lys Gln Cys Ala Ser Ala Pro Cys Arg Asn Gly Gly Val Cys	
690 695 700 705	
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Met	Ala	Thr	Thr	Ser	Arg	Glu	Ser	Ala	Asp	Thr	Leu	Arg	Leu	Glu	Leu	
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gat	ggg	ggg	cag	atg	aag	ctc	act	gtc	aac	ctc	gac	tgc	ctg	cgc	gtc	2517
Asp	Gly	Gly	Gln	Met	Lys	Leu	Thr	Val	Asn	Leu	Asp	Cys	Leu	Arg	Val	
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Gly	Cys	Ala	Pro	Ser	Lys	Gly	Pro	Glu	Thr	Leu	Phe	Ala	Gly	His	Lys	
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Leu	Asn	Asp	Asn	Glu	Trp	His	Thr	Val	Arg	Val	Val	Arg	Arg	Gly	Lys	
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Ser	Leu	Gln	Leu	Ser	Val	Asp	Asn	Val	Thr	Val	Glu	Gly	Gln	Met	Ala	
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Gly	Ala	His	Met	Arg	Leu	Glu	Phe	His	Asn	Ile	Glu	Thr	Gly	Ile	Met	
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Thr	Glu	Arg	Arg	Phe	Ile	Ser	Val	Val	Pro	Ser	Asn	Phe	Ile	Gly	His	
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Leu	Ser	Gly	Leu	Val	Phe	Asn	Gly	Gln	Pro	Tyr	Met	Asp	Gln	Cys	Lys	
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Asp	Gly	Asp	Ile	Thr	Tyr	Cys	Glu	Leu	Asn	Ala	Arg	Phe	Gly	Leu	Arg	
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Ala	Ile	Val	Ala	Asp	Pro	Val	Thr	Phe	Lys	Ser	Arg	Ser	Ser	Tyr	Leu	
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gca	ctc	gcc	acg	ctc	caa	gcc	tat	gct	tcc	atg	cac	ctc	ttc	ttc	cag	2949
Ala	Leu	Ala	Thr	Leu	Gln	Ala	Tyr	Ala	Ser	Met	His	Leu	Phe	Phe	Gln	
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Phe	Lys	Thr	Thr	Ala	Pro	Asp	Gly	Leu	Leu	Leu	Phe	Asn	Ser	Gly	Asn	
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Pro Gly Asn Val His Thr Leu Lys Ile Asp Ser Arg Thr Val Thr Gln			
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His Ser Asn Gly Ala Arg Asn Leu Asp Leu Lys Gly Glu Leu Tyr Ile			
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Ser Arg Asp Gly Phe Gln Gly Cys Leu Ala Ser Val Asp Leu Asn Gly			
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cgt ctc cca gac ctc atc gcc gac gcc ctg cac cgc att ggg cag gtg			3381
Arg Leu Pro Asp Leu Ile Ala Asp Ala Leu His Arg Ile Gly Gln Val			
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Glu Arg Gly Cys Asp Gly Pro Ser Thr Thr Cys Thr Glu Glu Ser Cys			
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gcc aac cag ggc gtc tgc ttg cag cag tgg gat ggc ttc acc tgc gac			3477
Ala Asn Gln Gly Val Cys Leu Gln Gln Trp Asp Gly Phe Thr Cys Asp			
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tgc acc atg act tcc tat gga ggc cct gtc tgc aat gat ccc ggg acc			3525
Cys Thr Met Thr Ser Tyr Gly Gly Pro Val Cys Asn Asp Pro Gly Thr			
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aca tac atc ttt ggg aag ggg gga gcg ctc atc acc tac acg tgg ccc			3573
Thr Tyr Ile Phe Gly Lys Gly Ala Leu Ile Thr Tyr Thr Trp Pro			
	1140	1145	1150
ccc aat gac agg ccc agc acg agg atg gat cgc ctg gcc gtg ggc ttc			3621
Pro Asn Asp Arg Pro Ser Thr Arg Met Asp Arg Leu Ala Val Gly Phe			
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agc acc cac cag cgg agc gct gtg ctg gtg cgg gtg gac agc gcc tcc			3669
Ser Thr His Gln Arg Ser Ala Val Leu Val Arg Val Asp Ser Ala Ser			
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Gly Leu Gly Asp Tyr Leu Gln Leu His Ile Asp Gln Gly Thr Val Gly			
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gtg atc ttt aac gtg ggc acg gac gac att acc atc gac gag ccc aac			3765
Val Ile Phe Asn Val Gly Thr Asp Asp Ile Thr Ile Asp Glu Pro Asn			
	1205	1210	1215

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Gly Gly Pro Cys Gln Ala Glu Arg Asp Asp Ser Asp Cys Glu Glu Pro	
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Ile Glu Ala Ser Gly Phe Ala Ser Gly Glu Val Phe Asp Ser Ser Leu	
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Pro Pro Thr Asp Asp Glu Asp Phe Tyr Thr Thr Phe Pro Leu Val Thr	
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Leu Arg Thr Asp Gly Ala Thr Gly Ala Pro Gly Val Leu Phe Ala Pro	
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Thr Ser Phe Glu Pro Arg Arg Pro Pro Pro Leu Arg Pro Gly Val Thr	
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Ser Ala Pro Gly Phe Pro His Leu Pro Thr Ala Asn Pro Thr Gly Pro	
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Ser Thr Thr Gly Met Val Val Gly Ile Val Ala Ala Ala Ala Leu Cys	
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Ile Leu Ile Leu Leu Tyr Ala Met Tyr Lys Tyr Arg Asn Arg Asp Glu	
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Gln	Ser	Asn	Gly	Ala	Val	Val	Lys	Glu	Lys	Ala	Pro	Ala	Ala	Pro	Lys	
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Thr	Pro	Ser	Lys	Ala	Lys	Lys	Asn	Lys	Asp	Lys	Glu	Tyr	Tyr	Val	*	
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Lys	Thr	Arg	Leu	Ala	Lys	Trp	Tyr	Met	Gln	Phe	Asp	
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cag	aag	ctg	atc	gag	gag	gtg	cat	gcc	gtg	gtc	acc	385
Gln	Lys	Leu	Ile	Glu	Glu	Val	His	Ala	Val	Val	Thr	
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aaa	cac	acc	aac	ttt	gtg	gag	gtc	ctg	gca	agc	tcc	433
Lys	His	Thr	Asn	Phe	Val	Glu	Val	Leu	Ala	Ser	Ser	
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Leu	Ser	Val	Leu	Gln	Phe	Arg	Asn	Phe	Lys	Ile	Ile	
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gct	ggc	ctc	tac	ttc	tgc	atc	tgt	gtg	gat	gtc	aat	529
Ala	Gly	Leu	Tyr	Phe	Cys	Ile	Cys	Val	Asp	Val	Asn	
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gct	tac	ctg	gag	gcc	att	cac	aac	ttc	gtg	gag	gtc	577
Ala	Tyr	Leu	Glu	Ala	Ile	His	Asn	Phe	Val	Glu	Val	
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Phe	His	Asn	Val	Cys	Glu	Leu	Asp	Leu	Val	Phe	Asn	
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Tyr	Thr	Val	Val	Asp	Glu	Met	Phe	Leu	Ala	Gly	Glu	
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agc	cag	acg	aag	gtg	ctg	aaa	cag	ctg	ctg	atg	cta	721
Ser	Gln	Thr	Lys	Val	Leu	Lys	Gln	Leu	Leu	Met	Leu	
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 Ala Ala Gly Phe Ser His Leu Asp Arg Arg Glu Arg Val Leu Lys Leu
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 Gly Glu Ser Phe Glu Lys Gln Pro Arg Cys Ala Phe His Thr Val Arg
 20 25 30 35

tat gac ttc aaa cct gct tct att gac act tct tct gaa gga tac ctt 198
 Tyr Asp Phe Lys Pro Ala Ser Ile Asp Thr Ser Ser Glu Gly Tyr Leu
 40 45 50

gag gtt ggt gaa ggt gaa cag gtg acc ata act ctg cca aat ata gaa 246
 Glu Val Gly Glu Gly Glu Gln Val Thr Ile Thr Leu Pro Asn Ile Glu
 55 60 65

ggt tca act cca cca gta act gtt ttc aaa ggt tca aaa aaa cct tac 294
 Gly Ser Thr Pro Pro Val Thr Val Phe Lys Gly Ser Lys Lys Pro Tyr
 70 75 80

tta aaa gaa tgc att ttg att att aac cat gat act gga gaa tgt cgg 342
 Leu Lys Glu Cys Ile Leu Ile Ile Asn His Asp Thr Gly Glu Cys Arg
 85 90 95

cta gaa aaa ctc agc agc aac atc act gta aaa aaa aca aga gtt gaa 390
 Leu Glu Lys Leu Ser Ser Asn Ile Thr Val Lys Lys Thr Arg Val Glu
 100 105 110 115

gga agc agt aaa att cag tat cgt aaa gaa caa cag caa caa caa atg 438
 Gly Ser Ser Lys Ile Gln Tyr Arg Lys Glu Gln Gln Gln Gln Gln Met
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Asp Lys Met Ser Pro Ala Ser Pro Ile Asp Asp Ile Glu Arg Glu Leu			
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aag gca gaa gct agt cta atg gac cag atg agt agt tgt gat agt tca			582
Lys Ala Glu Ala Ser Leu Met Asp Gln Met Ser Ser Cys Asp Ser Ser			
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Ser Asp Ser Lys Ser Ser Ser Ser Ser Ser Glu Asp Ser Ser Ser			
180	185	190	195
gac tca gaa gat gaa gat tgc aaa tcc tct act tct gat aca ggg aat			678
Asp Ser Glu Asp Glu Asp Cys Lys Ser Ser Thr Ser Asp Thr Gly Asn			
200	205	210	
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Cys Val Ser Gly His Pro Thr Met Thr Gln Tyr Arg Ile Pro Asp Ile			
215	220	225	
gat gcc agt cat aat aga ttt cga gac aac agt ggc ctt ctg atg aat			774
Asp Ala Ser His Asn Arg Phe Arg Asp Asn Ser Gly Leu Leu Met Asn			
230	235	240	
act tta aga aat gat ttg cag ctg agt gaa tca gga agt gac agt gat			822
Thr Leu Arg Asn Asp Leu Gln Leu Ser Glu Ser Gly Ser Asp Ser Asp			
245	250	255	
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Asp *			
260			
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Arg Lys Val Leu Lys Glu Val Arg Val Gln Asp Glu Asn Asn Val Cys	

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cac ctc agc ttt gtg cgc tct gtt act atg gac aag tgg aag gac att His Leu Ser Phe Val Arg Ser Val Thr Met Asp Lys Trp Lys Asp Ile 55 60 65 70			246
gag ctt gag aag atg aaa gct ggt ggg aat gct aag ttc cga gag ttc Glu Leu Glu Lys Met Lys Ala Gly Gly Asn Ala Lys Phe Arg Glu Phe 75 80 85			294
ctg gag tct cag gag gat tac gat cct tgc tgg tcc ttg cag gag aag Leu Glu Ser Gln Glu Asp Tyr Asp Pro Cys Trp Ser Leu Gln Glu Lys 90 95 100			342
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gcc gaa ggc aga gag tgg tct ctg gag tca tca cct gcc cag aac tgg Ala Glu Gly Arg Glu Trp Ser Leu Glu Ser Ser Pro Ala Gln Asn Trp 120 125 130			438
acc cca cct cag ccc agg acg ctg ccg tcc atg gtg cac cga gtc tct Thr Pro Pro Gln Pro Arg Thr Leu Pro Ser Met Val His Arg Val Ser 135 140 145 150			486
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aag ttt gga tcc caa gcg agt cag aag gcg tcc gag ctg ggc cac agc Lys Phe Gly Ser Gln Ala Ser Gln Lys Ala Ser Glu Leu Gly His Ser 235 240 245			774

ctg aac gag aac gtc ctc aag cct gcg cag gag aag gtg aag gag gga 822
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 Lys Ile Phe Asp Asp Val Ser Ser Gly Val Ser Gln Leu Ala Ser Lys
 265 270 275

gtc cag gga gtc ggt agt aag gga tgg cgg gac gtc acc acc ttt ttt 918
 Val Gln Gly Val Gly Ser Lys Gly Trp Arg Asp Val Thr Thr Phe Phe
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tcg ggg aaa gca gag ggc ccc ttg gac agc ccc tcg gag ggc cac agt 966
 Ser Gly Lys Ala Glu Gly Pro Leu Asp Ser Pro Ser Glu Gly His Ser
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 Tyr Gln Asn Ser Gly Leu Asp His Phe Gln Asn Ser Asn Ile Asp Gln
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<222> (596)..(1840)

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Met Phe Arg Asp Gln Val Gly Ile Leu Ala Gly Trp Phe Lys Gly Trp
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Asn Glu Cys Glu Gln Thr Val Ala Leu Leu Ser Leu Pro Lys Arg Val
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acc cgt acc cag gcc cgc ttc ctg cag ctc tgc ctg gag cac tca ctg      742
Thr Arg Thr Gln Ala Arg Phe Leu Gln Leu Cys Leu Glu His Ser Leu
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gcg gac tgc aat gac atc cac ctg ctg gag tgc gag gcc aac agt gct      790
Ala Asp Cys Asn Asp Ile His Leu Leu Glu Ser Glu Ala Asn Ser Ala
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gcc atc gtc agc cag tgg cag cag gag tcc aaa gag aag gtg gtg tcc      838
Ala Ile Val Ser Gln Trp Gln Gln Glu Ser Lys Glu Lys Val Val Ser
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Leu Leu Leu Ser His Leu Pro Leu Leu Gln Pro Gly Asn Thr Glu Ala
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Lys Ser Glu Tyr Met Arg Leu Leu Gln Lys Val Leu Ala Tyr Ser Ile
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Pro Glu Pro Ser Tyr His Ser Arg Gln Gly Ser Asp Glu Trp Gly Gly	
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cct gca gag cta ggc cct ggg gag gca ggg cca ggc tgg cag gac aag	1174
Pro Ala Glu Leu Gly Pro Gly Glu Ala Gly Pro Gly Trp Gln Asp Lys	
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Pro Pro Arg Glu Asn Gly His Val Pro Phe His Pro Ser Ser Ser Val	
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Pro Pro Ala Ile Asn Ser Ile Gly Ser Asn Ala Asn Thr Gly Leu Pro	
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Cys Gln Ile His Pro Ser Pro Leu Lys Arg Ser Met Ser Leu Ile Pro	
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Thr Ser Pro Gln Val Pro Gly Glu Trp Pro Ser Pro Glu Glu Leu Gly	
245 250 255	
gcc cgg gct gct ttt acc acg ccc gat cac gca cct ctc tcg ccc cag	1414
Ala Arg Ala Ala Phe Thr Thr Pro Asp His Ala Pro Leu Ser Pro Gln	
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agc agc gtg gcc tcc tct ggc agt gag cag aca gag gag cag ggc tcc	1462
Ser Ser Val Ala Ser Ser Gly Ser Glu Gln Thr Glu Glu Gln Gly Ser	
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agc cgg aac acc ttc cag gag gat ggc agt ggc atg aaa gat gtg ccc	1510
Ser Arg Asn Thr Phe Gln Glu Asp Gly Ser Gly Met Lys Asp Val Pro	
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Ser Trp Leu Lys Ser Leu Arg Leu His Lys Tyr Ala Ala Leu Phe Ser	
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Gln Met Ser Tyr Glu Glu Met Met Thr Leu Thr Glu Gln His Leu Glu	
325 330 335	

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Ser Gln Asn Val Thr Lys Gly Ala Arg His Lys Ile Ala Leu Ser Ile	
340 345 350	
cag aag ctg cgt gag aga cag agc gtc ctc aag tcc cta gag aag gat	1702
Gln Lys Leu Arg Glu Arg Gln Ser Val Leu Lys Ser Leu Glu Lys Asp	
355 360 365	
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Val Leu Glu Gly Gly Asn Leu Arg Asn Ala Leu Gln Glu Leu Gln Gln	
370 375 380 385	
atc atc atc act ccc atc aag gcc tac agt gtc ctc cag gcc acc gtg	1798
Ile Ile Ile Thr Pro Ile Lys Ala Tyr Ser Val Leu Gln Ala Thr Val	
390 395 400	
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gacacagggtt tgtttgggga caacaaagat ggcatttgtg agtgttttga agcaaccctg	240
actgattaca tttttctccc ttgtgttctt tttatcccag gtttgaattt tctcggagaa	300
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Met Gly Ser Gly Pro Ile Asp	
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ccc aaa gaa ctt ctc aag ggc ctg gac agc ttc ctt aac cga gat ggg	881
Pro Lys Glu Leu Leu Lys Gly Leu Asp Ser Phe Leu Asn Arg Asp Gly	
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gaa gtc aaa agt gtg gat ggg att tcc aag atc ttc agt ttg atg aag	929
Glu Val Lys Ser Val Asp Gly Ile Ser Lys Ile Phe Ser Leu Met Lys	
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Glu Ala Arg Lys Met Val Ser Arg Cys Thr Tyr Leu Asn Ile Leu Leu	
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Gln Thr Arg Ser Pro Glu Ile Leu Val Lys Phe Ile Asp Val Gly Gly	
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Tyr Lys Leu Leu Asn Asn Trp Leu Thr Tyr Ser Lys Thr Thr Asn Asn	
75 80 85	
att ccc ctc ctc cag caa att cta ctg acc ctg cag cat cta ccg ctc	1121
Ile Pro Leu Leu Gln Gln Ile Leu Leu Thr Leu Gln His Leu Pro Leu	
90 95 100	
act gta gac cat ctc aag cag aac aac aca gct aaa ctg gtg aag cag	1169
Thr Val Asp His Leu Lys Gln Asn Asn Thr Ala Lys Leu Val Lys Gln	
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Leu Ser Lys Ser Ser Glu Asp Glu Glu Leu Arg Lys Leu Ala Ser Val	
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Leu Val Ser Asp Trp Met Ala Val Ile Arg Ser Gln Ser Ser Thr Gln	
140 145 150	
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Pro Ala Glu Lys Asp Lys Lys Lys Arg Lys Asp Glu Gly Lys Ser Arg	
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acc acc ctt cct gag cga cct ttg aca gag gtg aag gct gag acc cgg	1361
Thr Thr Leu Pro Glu Arg Pro Leu Thr Glu Val Lys Ala Glu Thr Arg	
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Ala Glu Glu Ala Pro Glu Lys Lys Arg Glu Lys Pro Lys Ser Leu Arg	
185 190 195	
acc aca gca ccc agt cat gcc aag ttc cgt tcc act gga cta gag ctg	1457

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Glu	Thr	Pro	Ser	Leu	Val	Pro	Val	Lys	Lys	Asn	Ala	Ser	Thr	Val	Val		
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gtt	tct	gac	aag	tac	aac	ctt	aaa	ccc	atc	ccc	ctc	aaa	cgt	cag	agc	1553	
Val	Ser	Asp	Lys	Tyr	Asn	Leu	Lys	Pro	Ile	Pro	Leu	Lys	Arg	Gln	Ser		
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Asn	Val	Ala	Ala	Pro	Gly	Asp	Ala	Thr	Pro	Pro	Ala	Glu	Lys	Lys	Tyr		
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aag	cca	ctc	aac	aca	aca	cct	aat	gcc	acc	aaa	gag	atc	aaa	gtg	aag	1649	
Lys	Pro	Leu	Asn	Thr	Thr	Pro	Asn	Ala	Thr	Lys	Glu	Ile	Lys	Val	Lys		
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atc	atc	ccg	cca	cag	cct	atg	gag	ggc	ctg	ggc	ttt	ctg	gat	gct	ctt	1697	
Ile	Ile	Pro	Pro	Gln	Pro	Met	Glu	Gly	Leu	Gly	Phe	Leu	Asp	Ala	Leu		
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				300					305						310		
ctg	tca	cct	acg	gct	gcc	aag	cca	agc	ccc	ttt	gaa	ggg	aaa	acg	agc	1793	
Leu	Ser	Pro	Thr	Ala	Ala	Lys	Pro	Ser	Pro	Phe	Glu	Gly	Lys	Thr	Ser		
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aca	gaa	cca	agc	aca	gcc	aaa	cct	tct	tcc	cca	gaa	cca	gca	cca	cct	1841	
Thr	Glu	Pro	Ser	Thr	Ala	Lys	Pro	Ser	Ser	Pro	Glu	Pro	Ala	Pro	Pro		
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Ser	Glu	Ala	Met	Asp	Ala	Asp	Arg	Pro	Gly	Thr	Pro	Val	Pro	Pro	Val		
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Glu	Val	Pro	Glu	Leu	Met	Asp	Thr	Ala	Ser	Leu	Glu	Pro	Gly	Ala	Leu		
360					365					370					375		
gat	gcc	aag	cca	gtg	gag	agt	cct	gga	gat	cct	aac	caa	ctg	acc	cgg	1985	
Asp	Ala	Lys	Pro	Val	Glu	Ser	Pro	Gly	Asp	Pro	Asn	Gln	Leu	Thr	Arg		
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aaa	ggc	agg	aag	agg	aaa	agt	gtg	aca	tgg	cct	gag	gaa	ggc	aaa	ctg	2033	
Lys	Gly	Arg	Lys	Arg	Lys	Ser	Val	Thr	Trp	Pro	Glu	Glu	Gly	Lys	Leu		
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Arg	Glu	Tyr	Phe	Tyr	Phe	Glu	Leu	Asp	Glu	Thr	Glu	Arg	Val	Asn	Val		
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aat	aag	atc	aag	gac	ttt	ggt	gag	gcg	gct	aag	cga	gag	ata	ctg	tca	2129	
Asn	Lys	Ile	Lys	Asp	Phe	Gly	Glu	Ala	Ala	Lys	Arg	Glu	Ile	Leu	Ser		

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cct ctt gtc acc cct gga agc aat agt cag gag cga tat atc cag gct Pro Leu Val Thr Pro Gly Ser Asn Ser Gln Glu Arg Tyr Ile Gln Ala 475 480 485			2273
gag cgg gag aag gga atc ctt cag gag ctc ttc ctg aac aag gag agt Glu Arg Glu Lys Gly Ile Leu Gln Glu Leu Phe Leu Asn Lys Glu Ser 490 495 500			2321
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atc ccc cta gat gag gag tgt tcc atg gat gag act ccg tat gtt gag Ile Pro Leu Asp Glu Glu Cys Ser Met Asp Glu Thr Pro Tyr Val Glu 520 525 530 535			2417
act ctg gaa cct ggg ggg tca ggt ggc tca cct gat ggg gca gga ggc Thr Leu Glu Pro Gly Gly Ser Gly Gly Ser Pro Asp Gly Ala Gly Gly 540 545 550			2465
tcc aag ttg cct cca gtt ctg gcc aat ctt atg gga agc atg ggt gct Ser Lys Leu Pro Pro Val Leu Ala Asn Leu Met Gly Ser Met Gly Ala 555 560 565			2513
gga aag ggc ccc caa ggc cct gga gga gga ggc att aat gtc caa gag Gly Lys Gly Pro Gln Gly Pro Gly Gly Gly Gly Ile Asn Val Gln Glu 570 575 580			2561
atc ctc acc tcc atc atg ggt agc cca aac agt cat cct tca gag gaa Ile Leu Thr Ser Ile Met Gly Ser Pro Asn Ser His Pro Ser Glu Glu 585 590 595			2609
cta ctg aaa caa cca gac tat tgc gac aag atc aag cag atg ctg gtg Leu Leu Lys Gln Pro Asp Tyr Ser Asp Lys Ile Lys Gln Met Leu Val 600 605 610 615			2657
cca cat gga ctc cta ggc cct ggc cca ata gcc aat ggt ttc cca cca Pro His Gly Leu Leu Gly Pro Gly Pro Ile Ala Asn Gly Phe Pro Pro 620 625 630			2705
ggg ggt cct ggg ggc ccc aag ggc atg cag cac ttt ccc cct gga cct Gly Gly Pro Gly Gly Pro Lys Gly Met Gln His Phe Pro Pro Gly Pro 635 640 645			2753
ggg gga cct atg cca ggt ccc cat gga ggc cct ggt ggg cca gtg ggt Gly Gly Pro Met Pro Gly Pro His Gly Gly Pro Gly Gly Pro Val Gly 650 655 660			2801

cca cgt ctt ctg ggt cct cca ccc cct ccc cgg gga ggt gat ccc ttc	2849
Pro Arg Leu Leu Gly Pro Pro Pro Pro Pro Arg Gly Gly Asp Pro Phe	
665 670 675	
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Trp Asp Gly Pro Gly Asp Pro Met Arg Gly Gly Pro Met Arg Gly Gly	
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Pro Gly Pro Gly Pro Gly Pro Tyr His Arg Gly Arg Gly Gly Arg Gly	
700 705 710	
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Gly Asn Glu Pro Pro Pro Pro Pro Pro Phe Arg Gly Ala Arg Gly	
715 720 725	
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Gly Arg Ser Gly Gly Gly Pro Pro Asn Gly Arg Gly Gly Pro Gly Gly	
730 735 740	
ggc atg gtt gga ggt ggt ggg cat cgt cct cac gaa ggc cct ggt ggg	3089
Gly Met Val Gly Gly Gly Gly His Arg Pro His Glu Gly Pro Gly Gly	
745 750 755	
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Gly Met Gly Asn Ser Ser Gly His Arg Pro His Glu Gly Pro Gly Gly	
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Gly Met Gly Ser Gly His Arg Pro His Glu Gly Pro Gly Gly Ser Met	
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Ser Gly Gly Ser Gly His Arg Pro His Glu Gly Pro Gly Gly Gly Met	
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Gly Ala Gly Gly Gly His Arg Pro His Glu Gly Pro Gly Gly Ser Met	
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ggt gga agt ggt gga cat cgt ccc cat gaa ggc cct gga cac ggg ggg	3377
Gly Gly Ser Gly Gly His Arg Pro His Glu Gly Pro Gly His Gly Gly	
840 845 850 855	
ccc cat ggc cac cgg cct cat gat gtc cct ggt cac cga ggc cat gac	3425
Pro His Gly His Arg Pro His Asp Val Pro Gly His Arg Gly His Asp	
860 865 870	
cat cga ggg ccg cca cct cat gag cac cgt ggc cat gat ggt cct ggc	3473
His Arg Gly Pro Pro Pro His Glu His Arg Gly His Asp Gly Pro Gly	
875 880 885	

cac ggg gga ggg ggc cac cga ggg cac gat gga ggc cac agc cat gga	3521
His Gly Gly Gly Gly His Arg Gly His Asp Gly Gly His Ser His Gly	
890 895 900	
gga gac atg tca aac cgc cct gtc tgc cga cat ttc atg atg aag ggc	3569
Gly Asp Met Ser Asn Arg Pro Val Cys Arg His Phe Met Met Lys Gly	
905 910 915	
aac tgc cgc tat gag aac aac tgt gcc ttc tac cac ccg ggt gtc aat	3617
Asn Cys Arg Tyr Glu Asn Asn Cys Ala Phe Tyr His Pro Gly Val Asn	
920 925 930 935	
ggg ccc ccc ctg ccc tag ggacca ttgcctgcc ctgttcacac aaccctgtg	3671
Gly Pro Pro Leu Pro *	
940	
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 <222> (184) .. (411)

<220>
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 <222> (1) ... (968)
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 aggtatatct cctacagcta tccctcccc cttccccac cccacaaaag gtcccagtgt 180
 gtg atg ttc ccc ttc ctg tgt cca tgt gtt ctc att gtt caa ttc cca 228
 Met Phe Pro Phe Leu Cys Pro Cys Val Leu Ile Val Gln Phe Pro
 1 5 10 15
 cct atg agt gag aac atg tgg gtt tgg ttt ttt tgt cct tgc gat agt 276
 Pro Met Ser Glu Asn Met Trp Val Trp Phe Phe Cys Pro Cys Asp Ser
 20 25 30
 ttg ctg aga atg atg gtt tcc agc ttc atc cat gtc cct gcg aag gac 324
 Leu Leu Arg Met Met Val Ser Ser Phe Ile His Val Pro Ala Lys Asp
 35 40 45
 atg aac tca ccc ttt ttt atg gaa tac tac aca gcc ata aaa agg aat 372
 Met Asn Ser Pro Phe Phe Met Glu Tyr Tyr Thr Ala Ile Lys Arg Asn
 50 55 60
 gac aac aca tcc ctt gca ggg aca tgg atg gag caa tag gccattatcc 421
 Asp Asn Thr Ser Leu Ala Gly Thr Trp Met Glu Gln *
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 gaataccgtt gtggatggta gtaatcgggt gaacaaagcg cccatgttca caattttagc 661
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gcgccgcctc ccgtgggctc cggccggcta agccgcggcg gacaact atg ctg aaa 176
Met Leu Lys
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gcc aag atc ctc ttc gtg ggg cct tgc gag agt gga aaa act gtt ttg 224
Ala Lys Ile Leu Phe Val Gly Pro Cys Glu Ser Gly Lys Thr Val Leu
5 10 15
gcc aac ttt ctg aca gaa tct tct gac atc act gaa tac agc cca acc 272
Ala Asn Phe Leu Thr Glu Ser Ser Asp Ile Thr Glu Tyr Ser Pro Thr
20 25 30 35
caa gga gtg agg atc cta gaa ttt gag aac ccg cat gtt acc agc aac 320
Gln Gly Val Arg Ile Leu Glu Phe Glu Asn Pro His Val Thr Ser Asn
40 45 50
aac aaa ggc acg ggc tgt gaa ttc gag cta tgg gac tgt ggt ggc gat 368
Asn Lys Gly Thr Gly Cys Glu Phe Glu Leu Trp Asp Cys Gly Gly Asp
55 60 65
gct aag ttt gag tcc tgc tgg ccg gcc ctg atg aag gat gct cat gga 416
Ala Lys Phe Glu Ser Cys Trp Pro Ala Leu Met Lys Asp Ala His Gly
70 75 80
gtg gtg atc gtc ttc aat gct gac atc cca agc cac cgg aag gaa atg 464
Val Val Ile Val Phe Asn Ala Asp Ile Pro Ser His Arg Lys Glu Met
85 90 95
gag atg tgg tat tcc tgc ttt gtc caa cag ccg tcc tta cag gac aca 512
Glu Met Trp Tyr Ser Cys Phe Val Gln Gln Pro Ser Leu Gln Asp Thr
100 105 110 115
cag tgt atg cta att gca cac cac aaa cca ggc tct gga gat gat aaa 560
Gln Cys Met Leu Ile Ala His His Lys Pro Gly Ser Gly Asp Asp Lys
120 125 130

gga agc ctg tct ttg tcg cca ccc ttg aac aag ctg aag ctg gtg cac	608
Gly Ser Leu Ser Leu Ser Pro Pro Leu Asn Lys Leu Lys Leu Val His	
135 140 145	
tca aac ctg gaa gat gac cct gag gag atc cgg atg gaa ttc ata aag	656
Ser Asn Leu Glu Asp Asp Pro Glu Glu Ile Arg Met Glu Phe Ile Lys	
150 155 160	
tat tta aaa agc ata atc aac tcc atg tct gag agc aga gac agg gag	704
Tyr Leu Lys Ser Ile Ile Asn Ser Met Ser Glu Ser Arg Asp Arg Glu	
165 170 175	
gag atg tca att atg acc tag cc agccttcacc tgggactgcc acatccccag	757
Glu Met Ser Ile Met Thr *	
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 <221> misc_feature
 <222> (1) ... (1517)
 <223> n = a,t,c or g

<400> 31	
ctcgaaatcg atactttgcc ggaccgggnc ggnnnnccgg ggtcgacggg aggcaggagg	60
gccgaccag gggtgctggc cgccctctgt gagaaaactg acaatgacat ccgggcctgc	120
atcaacaccc tgcagttcct gtacagccgg ggccagcggg agctgagcgt gcgggacgtg	180
caggccacac gcgtgggcct caaggaccag cgcagagggc tcttctcggt gtggcaggag	240
gtcttccagc tgctcgagc ccagagcacc ccacctgcag gcgccgtgtg ggccaggacc	300
cgcacctgcc tgctgacaca ctctgctgg gtgacgggga cgcgggctcc ctcacctccg	360

cctcacagcg attctaccgt gtcctgcatg ccgctgcctc tgcgggagag cacgagaagg 420
tggtccaggg cttgtttgac aacttcctgc gtctgcggct gcgagactcc agcctgggtg 480
ctgtgtgtgt ggccctcgac tggctggcct tcgatgacct gctggcgggg gctgctcatc 540
acagccagag cttccagctg ctgcgctacc cacccttcct gcccgaggcc ttccatgtgc 600
tgtttgcttc cagccacaca cccaggatca ccttccccag cagccagcag gagggcccaga 660
accgg atg agc cag atg agg aac ctg atc cag acg ctg gtg tcc ggc 707
Met Ser Gln Met Arg Asn Leu Ile Gln Thr Leu Val Ser Gly
1 5 10
atc gcg cca gcc acg cgc agc cgg gcc acg ccc cag gcc ctg ctc ctc 755
Ile Ala Pro Ala Thr Arg Ser Arg Ala Thr Pro Gln Ala Leu Leu Leu
15 20 25 30
gat gcc ctc tgc ctg ctc ctg gac att ctt gcg ccc aag ctc cgc ccc 803
Asp Ala Leu Cys Leu Leu Leu Asp Ile Leu Ala Pro Lys Leu Arg Pro
35 40 45
gtg agc aca cag ctg tac agc acc cgt gaa aag caa cag ctg gcc agc 851
Val Ser Thr Gln Leu Tyr Ser Thr Arg Glu Lys Gln Gln Leu Ala Ser
50 55 60
ctg gtg ggc acg atg ctc gct tac agc ctg acc tac cgc cag gag cgc 899
Leu Val Gly Thr Met Leu Ala Tyr Ser Leu Thr Tyr Arg Gln Glu Arg
65 70 75
acg ccc gat ggc cag tac atc tac agg ctg gag ccg aac gtg gag gaa 947
Thr Pro Asp Gly Gln Tyr Ile Tyr Arg Leu Glu Pro Asn Val Glu Glu
80 85 90
ctc tgc cgc ttc cct gag ctg cct gcc cgc aag ccc ctc acc tac cag 995
Leu Cys Arg Phe Pro Glu Leu Pro Ala Arg Lys Pro Leu Thr Tyr Gln
95 100 105 110
acg aag cag ctc atc gcc cgc gag atc gag gtg gag aag atg cgg cgg 1043
Thr Lys Gln Leu Ile Ala Arg Glu Ile Glu Val Glu Lys Met Arg Arg
115 120 125
gcg gag gct tct gcc cgg gta gag aac agc ccc cag gtg gat ggg agc 1091
Ala Glu Ala Ser Ala Arg Val Glu Asn Ser Pro Gln Val Asp Gly Ser
130 135 140
ccc cca ggg ctc gag ggt ctg ctg ggg ggc att ggg gag aaa ggg gtg 1139
Pro Pro Gly Leu Glu Gly Leu Leu Gly Gly Ile Gly Glu Lys Gly Val
145 150 155
cac cga cct gcc cca cgc aac cat gag cag cgg ctg gag cac atc atg 1187
His Arg Pro Ala Pro Arg Asn His Glu Gln Arg Leu Glu His Ile Met
160 165 170
agg cga gcg gcc cgg gag gaa cag cct gag aag gac ttc ttt gga cgt 1235
Arg Arg Ala Ala Arg Glu Glu Gln Pro Glu Lys Asp Phe Phe Gly Arg

175	180	185	190	
gtg gtc gtc agg agc aca gca gtc ccg agt gca ggg gac acg gcc ccg				1283
Val Val Val Arg Ser Thr Ala Val Pro Ser Ala Gly Asp Thr Ala Pro				
	195	200	205	
gag cag gac tca gtg gag cgg cgc atg ggc aca gcg gtg ggc agg agc				1331
Glu Gln Asp Ser Val Glu Arg Arg Met Gly Thr Ala Val Gly Arg Ser				
	210	215	220	
gag gtc tgg ttc cgc ttc aac gag ggt gtc tcc aac gcc gtg cgg cgc				1379
Glu Val Trp Phe Arg Phe Asn Glu Gly Val Ser Asn Ala Val Arg Arg				
	225	230	235	
agc ctg tac atc agg gac ttg ctc tag ttctc tgagccgcgg acatgccctc				1431
Ser Leu Tyr Ile Arg Asp Leu Leu *				
	240	245		
gcattgcttc ccgcagagtg cagagacagg aagctggaga tgtctttata aagtcacacc				1491
tttacagact gtaaaaaaaaa aaaaaa				1517

<210> 32
 <211> 618
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (498) .. (572)

<400> 32	
ttttgcctaa gatacaatga taagtaaaaa catgttacag agtaataacg tgttgcatag	60
gacaataactg taaatgtggt tcattccatc aacagacact gagccctgcg acgtgcctgg	120
ctctattcta catctgaggg acacaaggtg aacaagacca ggccactgta ttcaacatct	180
acatttaatg gaaatTTTTg aaagaagact tgagagatta taacagtggg cttcagcatc	240
agggagtagg cctagaagaa gaggaggtca agaagtggct tttcttatta tcttcttaac	300
tcttcaaatt ttactatga gcaattatta ttttttatta aaattttagg ccaggcttat	360
ggctgtaatc ctagcagttt gggaggccaa ggtgagcgga tcacttgagg ttgggagttc	420
gagaccagcc tgaccaacat ggagaaactc tgtctctact taaaaaaaaa taaaaatta	480
gccaggcatg gtggcac	
atg cct gta gtc cca gct act cag gag act gag	530
Met Pro Val Val Pro Ala Thr Gln Glu Thr Glu	
1 5 10	
gca ggg gaa ttg cct gaa cct ggg aga cag agg ttg caa tga gccaaaga	579
Ala Gly Glu Leu Pro Glu Pro Gly Arg Gln Arg Leu Gln *	

tcacgcctcg tgccgaattc ttggcctcga gggccaaat

618

<210> 33

<211> 1188

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (313) .. (849)

<400> 33

aaggatcctt aattaaatta atcccccccc cccggggaga aacgttctca ctcgctctct 60

gctcgctgcg ggcgctcccc gccctctgct gccagaacct tggggatgtg cctagaccgc 120

gcgcagcaca cgtccggggc aaccgcgagc agaacaaacc tttggcgggc ggccaggagg 180

ctccctccca gccaccgcc cctccagcg cctttttttc ccccatata atacaagatc 240

ttccttctc agttccctta aagcacagcc cagggaacc tctcacagt tttcatccag 300

ccacgggcca gc atg tct ggg ggc aaa tac gta gac tcg gag gga cat 348
Met Ser Gly Gly Lys Tyr Val Asp Ser Glu Gly His
1 5 10

ctc tac acc gtt ccc atc cgg gaa cag ggc aac atc tac aag ccc aac 396
Leu Tyr Thr Val Pro Ile Arg Glu Gln Gly Asn Ile Tyr Lys Pro Asn
15 20 25

aac aag gcc atg gca gac gag ctg agc gag aag caa gtg tac gac gcg 444
Asn Lys Ala Met Ala Asp Glu Leu Ser Glu Lys Gln Val Tyr Asp Ala
30 35 40

cac acc aag gag atc gac ctg gtc aac cgc gac cct aaa cac ctc aac 492
His Thr Lys Glu Ile Asp Leu Val Asn Arg Asp Pro Lys His Leu Asn
45 50 55 60

gat gac gtg gtc aag att gac ttt gaa gat gtg att gca gaa cca gaa 540
Asp Asp Val Val Lys Ile Asp Phe Glu Asp Val Ile Ala Glu Pro Glu
65 70 75

ggg aca cac agt ttt gac ggc att tgg aag gcc agc ttc acc acc ttc 588
Gly Thr His Ser Phe Asp Gly Ile Trp Lys Ala Ser Phe Thr Thr Phe
80 85 90

act gtg acg aaa tac tgg ttt tac cgc ttg ctg tct gcc ctc ttt ggc 636
Thr Val Thr Lys Tyr Trp Phe Tyr Arg Leu Leu Ser Ala Leu Phe Gly
95 100 105

atc ccg atg gca ctc atc tgg ggc att tac ttc gcc att ctc tct ttc 684
Ile Pro Met Ala Leu Ile Trp Gly Ile Tyr Phe Ala Ile Leu Ser Phe

110	115	120	
ctg cac atc tgg gca gtt gta cca tgc att aag agc ttc ctg att gag			732
Leu His Ile Trp Ala Val Val Pro Cys Ile Lys Ser Phe Leu Ile Glu			
125	130	135	140
att cag tgc atc agc cgt gtc tat tcc atc tac gtc cac acc gtc tgt			780
Ile Gln Cys Ile Ser Arg Val Tyr Ser Ile Tyr Val His Thr Val Cys			
	145	150	155
gac cca ctc ttt gaa gct gtt ggg aaa ata ttc agc aat gtc cgc atc			828
Asp Pro Leu Phe Glu Ala Val Gly Lys Ile Phe Ser Asn Val Arg Ile			
	160	165	170
aac ttg cag aaa gaa ata taa at gacatttcaa ggatagaagt atacctgatt			881
Asn Leu Gln Lys Glu Ile *			
	175		
ttttttcctt ttaattttcc tgggtgccaat ttcaagttcc aagttgctaa tacagcaaca			941
atztatgaat tgaattatct tgggtgaaaa taaaaagatc actttctcag ttttcataag			1001
tattatgtct cttctgagct atttcatcta tttttggcag tctgaatttt taaaacccat			1061
ttaaattttt ttccttacct ttttatttgc atgtggatca accatcgctt tattggctga			1121
gatatgaaca tattgttgaa aggtaatttg agagaaatat gaagaactga ggaggaaaaa			1181
aaaaaaa			1188
<210> 34			
<211> 920			
<212> DNA			
<213> Homo sapiens			
<220>			
<221> CDS			
<222> (515) .. (697)			
<400> 34			
taagcttgcg gccgcaattt tttttttttt ttttttgtat tttttggtag agacgggatt			60
tcactatggt ggtcaggctg gtctcgaact cccgaccgca agtgatccac ccgccttggc			120
ctcccaaagt gctgggatta caagcttgag ccaactgcacc cagcctggaa agtatattta			180
tgaaagggtt gcactccaca aaagcatctt tgctaggggtg tcaaggaaga gatcactaaa			240
ccaaccccaa cacatccata caattccagc aatctagaga gggctgggtcc ttttcctttt			300
ctggattatt ttctgttctc agtaaaacaa gtattttactg tgatactgaa aactgggaa			360
attaacactg attaagatat tttaaact gagtcttaata tataacagaa ccagttttca			420

tcagaatgct tttacgtcac attcagtgaa gtgttacgct aatatattct acagccctga 480

agatagaaaa aaggtttctc tccaggtatg agat atg gta caa aaa tac att 532
Met Val Gln Lys Tyr Ile
1 5

ttt cca cat aca aaa gag aga aaa aaa caa aga cat gtg gcg ggt ggc 580
Phe Pro His Thr Lys Glu Arg Lys Lys Gln Arg His Val Ala Gly Gly
10 15 20

gag ggg agg ccc aat ccc aac acc cta caa ggt tcc atg gaa tgg aga 628
Glu Gly Arg Pro Asn Pro Asn Thr Leu Gln Gly Ser Met Glu Trp Arg
25 30 35

agg aac aaa aaa atc ccc aat tat ttt ggg gta aga tgt gcc cca gaa 676
Arg Asn Lys Lys Ile Pro Asn Tyr Phe Gly Val Arg Cys Ala Pro Glu
40 45 50

aag gtg aaa tct atg caa taa aa cccaggtttt cttcaaatct agcatctagg 729
Lys Val Lys Ser Met Gln *
55 60

atttctatca gagtttcaaa taatcagaat ttctatcaga atttctaccc tgaggtgaca 789

cctactaact gtaggttctt tcattaaaaa tgaagacatc tttcaccaga atgtatcaag 849

ctataaaaact ggcttcagag cctacactta gccagagtgg aaaaaaaaaa tagtgcatat 909

tttcgacagc a 920

<210> 35
<211> 1233
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (133)..(1122)

<400> 35
gtgatcatcg acgcctgcgg taccggtccg gaattcccgg gtcgaccac gcgtccgggc 60

ggcttcctag tgagtcggcg gctgatttag aaggagggttc aggctacggt gagccgaagc 120

cacacaggag cc atg gaa gtg gca gag ccc agc agc ccc act gaa gag 168
Met Glu Val Ala Glu Pro Ser Ser Pro Thr Glu Glu
1 5 10

gag gag gag gaa gag gag cac tcg gca gag cct cgg ccc cgc act cgc 216
Glu Glu Glu Glu Glu Glu His Ser Ala Glu Pro Arg Pro Arg Thr Arg
15 20 25

tcc aat cct gaa ggg gct gag gac cgg gca gta ggg gca cag gcc agc 264
Ser Asn Pro Glu Gly Ala Glu Asp Arg Ala Val Gly Ala Gln Ala Ser

30

35

40

gtg ggc agc cgc agc gag ggt gag ggt gag gcc gcc agt gct gat gat	312
Val Gly Ser Arg Ser Glu Gly Glu Gly Glu Ala Ala Ser Ala Asp Asp	
45 50 55 60	
ggg agc ctc aac act tca gga gcc ggc cct aag tcc tgg cag gtg ccc	360
Gly Ser Leu Asn Thr Ser Gly Ala Gly Pro Lys Ser Trp Gln Val Pro	
65 70 75	
ccg cca gcc cct gag gtc caa att cgg aca cca agg gtc aac tgt cca	408
Pro Pro Ala Pro Glu Val Gln Ile Arg Thr Pro Arg Val Asn Cys Pro	
80 85 90	
gag aaa gtg att atc tgc ctg gac ctg tca gag gaa atg tca ctg cca	456
Glu Lys Val Ile Ile Cys Leu Asp Leu Ser Glu Glu Met Ser Leu Pro	
95 100 105	
aag ctg gag tgc ttc aac ggc tcc aaa acc aac gcc ctc aat gtc tcc	504
Lys Leu Glu Ser Phe Asn Gly Ser Lys Thr Asn Ala Leu Asn Val Ser	
110 115 120	
cag aag atg att gag atg ttc gtg cgg aca aaa cac aag atc gac aaa	552
Gln Lys Met Ile Glu Met Phe Val Arg Thr Lys His Lys Ile Asp Lys	
125 130 135 140	
agc cac gag ttt gca ctg gtg gtg gtg aac gat gac acg gcc tgg ctg	600
Ser His Glu Phe Ala Leu Val Val Val Asn Asp Asp Thr Ala Trp Leu	
145 150 155	
tct ggc ctg acc tcc gac ccc cgc gag ctc tgt agc tgc ctc tat gat	648
Ser Gly Leu Thr Ser Asp Pro Arg Glu Leu Cys Ser Cys Leu Tyr Asp	
160 165 170	
ctg gag acg gcc tcc tgt tcc acc ttc aat ctg gaa gga ctt ttc agc	696
Leu Glu Thr Ala Ser Cys Ser Thr Phe Asn Leu Glu Gly Leu Phe Ser	
175 180 185	
ctc atc cag cag aaa act gag ctt ccg gtc aca gag aac gtg cag acg	744
Leu Ile Gln Gln Lys Thr Glu Leu Pro Val Thr Glu Asn Val Gln Thr	
190 195 200	
att ccc ccg cca tat gtg gtc cgc acc atc ctt gtc tac agc cgt cca	792
Ile Pro Pro Pro Tyr Val Val Arg Thr Ile Leu Val Tyr Ser Arg Pro	
205 210 215 220	
cct tgc cag ccc cag ttc tcc ttg acg gag ccc atg aag aaa atg ttc	840
Pro Cys Gln Pro Gln Phe Ser Leu Thr Glu Pro Met Lys Lys Met Phe	
225 230 235	
cag tgc cca tat ttc ttc ttt gac gtt gtt tac atc cac aat ggc act	888
Gln Cys Pro Tyr Phe Phe Phe Asp Val Val Tyr Ile His Asn Gly Thr	
240 245 250	
gag gag aag gag gag gag atg agt tgg aag gat atg ttt gcc ttc atg	936
Glu Glu Lys Glu Glu Glu Met Ser Trp Lys Asp Met Phe Ala Phe Met	
255 260 265	

ggc agc ctg gat acc aag ggt acc agc tac aag tat gag gtg gca ctg	984
Gly Ser Leu Asp Thr Lys Gly Thr Ser Tyr Lys Tyr Glu Val Ala Leu	
270 275 280	
gct ggg cca gcc ctg gag ttg cac aac tgc atg gcg aaa ctg ttg gcc	1032
Ala Gly Pro Ala Leu Glu Leu His Asn Cys Met Ala Lys Leu Leu Ala	
285 290 295 300	
cac ccc ctg cag cgg cct tgc cag agc cat gct tcc tac agc ctg ctg	1080
His Pro Leu Gln Arg Pro Cys Gln Ser His Ala Ser Tyr Ser Leu Leu	
305 310 315	
gag gag gag gat gaa gcc att gag gtt gag gcc act gtc tga accatcc	1129
Glu Glu Glu Asp Glu Ala Ile Glu Val Glu Ala Thr Val *	
320 325 330	
ctgtacatct gcaccttctt gtgcaaggaa gtccttggcc taaagccttg gttctcaaac	1189
tgggttcctt gggacctccg ggggtggggg gttccaggag gcat	1233